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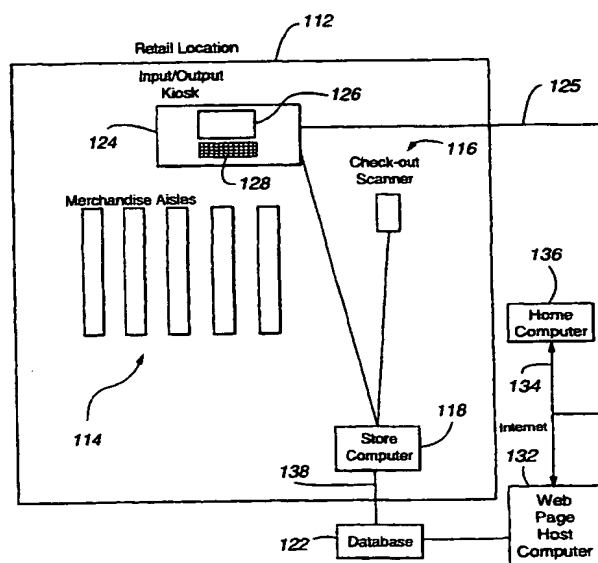
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(54) Title: RETAIL LOCATION SHOPPING ASSISTANCE METHOD AND APPARATUS



(57) Abstract: A shopping assistance program provides at least one input/output device configured for use in or at a retail location (112). In one aspect, a shopper can access the input/output device, e.g. in a kiosk near the beginning of a shopping trip such as located at the front of the store or entrance of the store, for adding, editing, modifying or otherwise processing a shopping list for use during the shopping trip. In one embodiment, shopping assistance includes providing suggestions for meals, ingredients or other shopping list items. Suggestions can be based fully or partially on needs, preferences or wants of the purchaser and/or needs, preferences or wants of the retail location (112) or service provider.

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## RETAIL LOCATION SHOPPING ASSISTANCE METHOD AND APPARATUS

Cross-reference is made to Serial No. 60/154,123 for "SHOPPING LIST  
5 ORGANIZER APPARATUS AND METHOD" (Attorney File No. 3730-914) and to  
Serial No. 60/153,965 for "PERSONALIZED WEB PAGE BASED ON MULTIPLE  
DATA SOURCES" (Attorney File No 3730-918) filed on September 15, 1999, both  
incorporated by reference.

The present invention is directed to a computer-based shopping assistance method  
10 and apparatus and in particular to a shopping assistance system which provides for  
shopping list functionality located at or in a retail location.

### BACKGROUND INFORMATION

Many purchasers or shoppers can benefit from the provision of certain types of  
15 shopping assistance. Particularly, the creation, development, editing, modification and/or  
maintenance of shopping lists are beneficially facilitated. While numerous programs  
exist which have list processing capabilities (e.g., processing of "to do" lists, and the  
like), there are numerous potential shopping assistance features which are unavailable,  
or can only be practically or efficiently provided when shoppers are at non-retail locations  
20 (such as processing lists on a home computer and the like). For example, items which  
may beneficially be added to or modified within a shopping list based on, for example,  
current sales promotions and the like (e.g. in a given retail location) may involve  
information not readily known or knowable when shopping lists are processed at non-  
retail locations (such as using a home computer). Furthermore, it is not unusual for the  
25 needs or wants of a shopper to change between the time a list may be processed at a non-  
retail location, and the time the shopper arrives at a retail location for shopping purposes.  
Accordingly, it would be useful to provide a shopping assistance system which can  
feasibly and readily be used to benefit the shopper while the shopper is in or at the  
retail location, possibly in combination with other list processing and/or other shopping  
30 assistance previously performed from a non-retail location.

List processing or other shopping assistance procedures performed at non-retail  
locations can also be less than ideal from the viewpoint of the retailer. Often, it is  
beneficial for a retailer to be able to maximize the effectiveness of sales, coupons or other  
promotions which may relate to rapidly changing conditions such as providing

promotions designed to encourage purchase of produce or other perishables. However, list processing which is performed, e.g., at the shopper's home or otherwise at a time previous to the shopping trip may occur when conditions at the retail location are substantially different (e.g. such that items being promoted at such a previous time are not the items which would be most beneficially promoted at the time of the shopping trip). Accordingly, it would be useful to provide a system permitting retailers to effectively offer promotions as a part of a shopping list processing procedure or other shopping system procedure substantially at the time the shopper is at or in the retail location for the shopping trip.

### SUMMARY OF THE INVENTION

The present invention includes a recognition of the existence and nature of problems in previous approaches, including as described herein. In one aspect, apparatus is provided in or at a retail location permitting a shopper to process a shopping list or otherwise access shopping assistance procedures while the shopper is at the retail location. The apparatus provides both input and output facilities, e.g. so that the user can interact (in a wired or wireless fashion) with a computer-implemented shopping assistance system. Preferably, the shopping assistance system provides suggestions or options for consideration by the shopper. For example, the shopping assistance system may suggest preparing certain meals or using certain recipes, may suggest the purchase of certain brand name products for use in preparing such meals or recipes, may suggest individual purchase items, e.g. items predicted as being needed or wanted by the shopper, e.g. based on predictive modeling and the like. In some embodiments, meals, recipes or items suggested, and/or coupons, sales or other offers or promotions may be displayed as part of the shopping assistance and such items may be selected based on conditions or needs of the retail store (e.g. a desire to reduce inventory of certain items) of manufacturers (such as offering manufacturer's coupons) and/or of other parties (such as the owner or operator of the shopping assistance program or shopping assistant device). In one embodiment the system can provide (preferably) targeted coupon delivery at the retail location, based on a customer's meal-planning decisions. In one embodiment, the system can provide secure delivery, at the retail location, of coupons selected at (or

otherwise based on information provided at) a non-retail location (such as over the internet)

In one embodiment, some of the aspects of the shopping assistant are customized or personalized to the shopper such as with reference to a database storing information about the shopper (who may be identified e.g., by a frequent shopper number or other identifier number, token, password or the like). In some embodiments, the shopper may also access or modify items stored in the database by way of a non-retail location computer such as a home computer. For example, a user may use a home computer during the week to add to, or otherwise modify a stored shopping list and then use an in-store input/output device for modifying, finalizing, printing or otherwise using or accessing the previously-compiled shopping list. In some aspects, the in-store input/output device may be used for promoting non-store items or services such as advertising and/or permitting purchase of items which are not available in the retail location.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram of a shopping assistance system according to one embodiment of the present invention;

Fig. 2 is a flow chart depicting a shopping assistance procedure according to one embodiment of the present invention;

Figs 3A - 3G depict displays of a computer screen during various stages of a meal-planning or list processing procedure, according to an embodiment of the present invention;

Figs. 4A - 4F depict displays of a computer screen during various stages of a meal-planning or list processing procedure, according to an embodiment of the present invention;

Fig. 5 is a flow chart of options and displays for a retail-location kiosk, according to an embodiment of the present invention;

Figs 6A-N and P-S depict displays of a in-store kiosk, according to an embodiment of the present invention; and

Fig. 7 depicts a display of a computer screen that can be used to remotely access or use personal shopping information or lists, according to an embodiment of the present invention.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As depicted in Fig. 1, a retail location 112, such as a grocery store, hardware store, gardening store or nursery, clothing store, and the like, typically includes a merchandise area for shoppers to view and/or select merchandise, often positioned along a plurality of a merchandise aisles 114 and a payment station or checkout scanner 116. Often the checkout scanner or scanners are coupled to a store computer 118 which may store, or have access to, pricing and/or inventory information. In the embodiment depicted in 112, the retail location includes, or has access to, a database 122 storing customer information. For example, name, address, banking or credit card information, telephone numbers, age, family members, shopping preferences and the like. In one embodiment, the database 122 includes past shopping information and/or the results of analysis based on past shopping information. For example, the database 122 may indicate that a shopper prefers natural food, organic food, low calorie food, low sodium food, convenience food or the like. The database 122 may indicate the shopper has certain shopping habits or preferences such as purchasing certain items in a given quantity or at a given frequency, certain brand or flavor preferences and the like, including non-intuitive consumption patterns or correlations, e.g. derived from advanced data analysis. For example, by analyzing and correlating consumption patterns, it might be discovered that consumers who purchase a particular type of chicken prefer promotions or advertisements for a particular brand of lampshade (or any of a number of different possible non-intuitive correlations). Some or all of this data can be used in connection with shopping assistance as described more fully below.

The database 122 can be stored in a device located at the retail location 112 as depicted in Fig. 1 or can be stored at a different location and remotely accessed, e.g., by the store computer 118. The database 122, in addition to storing "point of sale" or similar information for use in shopping assistance, can also, or alternatively, store information

from one or more other sources. In one embodiment, the database 122 is coupled to a web page or other Internet host computer 132, such as a computer 132 which can be accessed by customers or others, over the Internet 134, e.g., from a home computer 136. For example, shoppers can use their home computer 136 for adding, deleting or revising items on a shopping list by accessing the retail locations web page or another web page (e.g., a web page of the entity which provides or maintains the input/output kiosk 124 and/or shopping assistance software). In addition to maintaining shopping lists, the shopper (or other user) can use the Internet for storing or revising a number of other types of information, including as described in Application Serial No. 60/153,965 (Attorney File No. 3730-918) incorporated herein by reference. The shopping list or other new or updated information provided via the Internet or other communication link can be stored in or provided to the database 122. In one embodiment, the database 122 may be located at the location of, or coupled to the web host computer 132. The kiosk 124 can communicate with the database 122 by an Internet link 125 or other communications links, as will be understood by those of skill in the art. In one embodiment, the store computer 118 can access some or all of the database 122 by a link 138 which can be a phone (modem) link, a tape or other physical medium transfer, an Internet link, a local area network link, a wide area network link, a satellite link or any of a variety of communication links as will be understood by those of skill in the art.

As depicted in Fig. 1, an input/output device 124 is positioned in or at the retail location 112. Preferably, the input/output device 124 is positioned, or made accessible, in a fashion so as to make it convenient or to promote use of the shopping assistant program near the beginning of the shopping trip (e.g., usually before the user enters the main portion of the merchandise area) such as by making the input/output device accessible near the entrance or front of the store. The input/output device 124 can employ any of (or a plurality of) a number of output devices including a screen 126 such as a CRT screen, LCD display and the like, one or more audio output devices, printers and other output devices known to those of skill in the art. Input devices can include one or more keyboards 128, touch screen devices, a mouse, joystick, track ball or other pointer device, voice recognition or handwriting recognition devices and procedures, card readers, motion detectors and the like. The input/output device 124 also includes

electronics for receiving and outputting data from and to the input/output devices and may include one or more computers, microprocessors and the like. In one embodiment, the input/output device 124 is configured as a generally stationary kiosk device. In one embodiment, the input/output device 124 is provided as part of a another in-store apparatus such as a coin handling apparatus (e.g., as described in U.S. Patent 5,620,079, incorporated herein), and automatic teller machine (ATM) or other bank or cash device, and the like.

In one embodiment, the input/output device 124 is a portable or mobile device such as a hand held device which may be carried by the shopper during the shopping trip, a device coupled to a shopping cart and the like. In one embodiment, the mobile device is equipped with a locator such as a positional transponder to permit tracking the location of the shopper within the retail location.

The input and output for use in shopping assistance may be handled by any (or a plurality) of computers, including one or more computers or microprocessors provided in the input/output device 124, the store computer 118, or another in-store computer, and/or a remote computer not located at the retail location. Data communication between the input/output device 124 and the shopping assistance computer can be by any of a plurality of known communication means, including over a local area network, such as using data communication cabling, radio, infrared or other wireless links, telephone communication links, Internet or similar communication links and the like.

In the embodiment depicted in Fig. 2, in use, the presence of a shopper is detected 212, e.g. using a motion detector or proximity detector, or at a input/output device 124 such as by a user inserting or swiping a frequent shopper card, bar code encoded card, proximity card, smartcard or other card, or inputting information using any other variety of input devices. In the depicted embodiment, when the detection step 212 does not involve the provision of a identifier number, the input/output device 124 will sense or prompt for a frequent shopper number or other identifier 214. Preferably a system according to the present invention can provide at least some functions such as shopping assistance functions even in the absence of identification of a shopper (e.g., when a shopper does not have a frequent shopper number and/or does not wish to input a frequent shopper number). If identity is not established 216, in the depicted embodiment,

the input/output device 124 will assign, or will offer to assign, a frequent shopper number, such as a temporary frequent shopper number, to the shopper 218. Preferably, the system will also prompt the shopper for the input of information about the shopper, or about preferences of the shopper 222, such as age, sex, shopping or product preferences and the like.

In the depicted embodiment, if the shopper's identity is established such as from a frequent shopper number, (or, in appropriate cases, even in the absence of identity) a number of shopping assistance features can be provided (either simultaneously or sequentially) including any or all of selection and display of advertisements 226, meal planning 228, shopping list processing 232, printing of various items or other output 234 and the like. In some embodiments, shopping assistance can be selected or configured based on characteristics unique to, or associated with, the shopper or with the shopper's household (or other associated group), such as geographic, demographic, or income characteristics, previous purchase history, determination of household qualification for participation in specific programs, or targeting methodologies based on shopper or household (or other group) identification, and the like. Advertisements, if provided, can be selected 226 in a variety of fashions. In one embodiment, information about an identified shopper or household, e.g., from the database 122, is used as a basis for selecting advertisement, such as selecting advertisements which are predicted to be most likely to affect shopper's shopping choices or other behavior. It is also possible to select advertisements, at least in part, based on financial considerations such as the amount of remuneration being provided for particular ads. In some cases, remuneration is related to characteristics of the shopper or household (such as when an advertiser provides more remuneration for sending an advertisement to a female customer than to a male customer, and the like).

In one embodiment, a shopper is prompted to initiate meal planning services 236. In response, the input/output device 124 may present various suggested meals and/or recipes 238. The suggestions may be selected based on a number of items such as information stored about an identified customer (either provided directly by the customer or deduced from historical purchasing information and the like) including information such as age, sex, household size or composition, dietary needs or preferences, and the



like. It is also possible to present some or all meal suggestions on the basis of the needs or desires of the retail location 112, such as suggesting meals which use ingredients which are currently overstocked or which provide a relatively high profit margin, and the like. In the depicted embodiment, a response to selection of suggested meals 242, the input/output device presents a list of ingredients 246 that can be used for preparing such meals. In one embodiment, this is done by way of adding such ingredients to the shopper's shopping list. Preferably the shopper has an opportunity to remove the some or all of the ingredients (for example if the shopper already has such ingredients). Preferably, some or all ingredients are shown as, or listed with, a particular brand name, size of package, flavor and the like. In one embodiment, a presentation of a particular brand name, size, flavor or the like is also provided with a selection (for activation by the shopper) to request additional or alternate suggestions (e.g., for a different brand name or a different size or flavor). The suggested brands, sizes, flavors and the like can be selected based on a number of criteria including expressed, predicted or deduced preferences or need of the shopper, and/or based on business or financial preferences of the retail location, manufacturers, shopping assistance system-providers, or similar non-shopper parties.

In one embodiment, presentation of ingredients or other shopping suggestions are accompanied by one or more product promotions including advertisements, sales, coupons, and the like.

In the depicted embodiment, shopping list processing 232, is either presented initially or presented after 248 meal planning, and can include presenting a prompt to initiate shopping list editing 234. In one embodiment, editing is assisted by presenting suggestions for shopping list items. The suggestions which are presented can be based on a number of considerations such as the expressed, modeled, predicted or deduced needs, wants or preferences of the shopper 256, including as a result of predictive modeling, e.g., as described in Serial No.60/153.965 (Attorney No. 3730-918), supra. Preferably, presentation of some or all suggestions for the shopping list are accompanied with identification of one or more brands, package sizes, flavors and the like, and/or with advertisements, coupons, sales or other promotions, any of which may be selected generally as described above in connection with meal planning 246.

In the embodiment depicted in Fig. 2, the input/output device 124 may print any or all of a number of items 234 including printing of coupons 258 (if the coupons are to be paper coupons), and/or printing of recipes 262, e.g., in accordance with the meals selected during meal planning 228. It is possible to provide some or all of the coupons 258 as electronic coupons, e.g., by storing the coupon information for transmission to the store computer 118 and/or checkout scanner 116 so that the appropriate discounts or other coupon advantages are provided automatically (and without the need for printed paper coupons) at the time the shopper checks out.

When the shopper indicates (or it is deduced) that he or she is finished at the input/output device 124 and is ready to begin merchandise selection, the shopper's shopping list is organized so that it can be printed out or otherwise provided or used 264. The shopping list can be organized in a number of ways and, in some embodiments, the shopper is permitted to select among different options for shopping list organization. In one embodiment, the shopping list may be organized in relation to the manner in which the retail location merchandise is arranged, e.g., in order of the aisles where the merchandise is located and the like. In some embodiments, e.g., at the option of the shopper, some or all items may be items which are gathered for the shopper, e.g., by store personnel (rather than the shopper personally selecting all of the items on the shopping list), for providing at checkout or for later delivery, e.g., to the shoppers residence. For example, the system may be configured such that (or the shopper may be allowed to request that) certain types of generally fungible items (such as paper goods, preselected brand name items and the like) will be gathered by store personnel while other items, such as produce, meat, dairy products and bakery items and the like, will be personally selected by the shopper. In any case, once the shopping list is organized in one of the fashions described, or in other similar fashions, the shopping list is appropriately output such as by printing some or all of the shopping list for use by the shopper, downloading the shopping list to a shopper's personal digital assistant (PDA) or similar device and the like.

After merchandise selection is completed 266, the shopper will come through a type of checkout procedure so that the amount of the bill for the shopping trip can be determined and paid. In one embodiment, the shopper's shopping list is updated 268 such

as by removing from the shopping list those items which have been purchased, and the database 122 is updated, such as by adding the purchased items to the shopper's purchase history, e.g., for use in predictive modeling or other shopping assistance procedures.

Meal planning 228 and/or shopping list editing 232 can be performed, in various  
5 embodiments, using the retail-location kiosk and/or using the home computer 136. As depicted in Fig. 3A, using a home computer, a user can be presented with an opportunity to select a displayed or featured meal 312 or to select from meals under various categories 314a, b, c (Fig. 3A). In response to selecting, for example, the featured meal 312, the user will be shown a display 316 (Fig. 3B). Preferably the user can search for  
10 other recipes 318 or may order or obtain information regarding other items 322a, b, c. Preferably the other items 322a, b, c which are displayed are related to the selected meal 316. For example, when, as depicted, the selected meal 316 is in the category "romantic dinner ideas", the additional selections permit the user to order flowers 322a, wine 322b and the like. On the other hand, if the user had selected "party planning" category 314c,  
15 the related items presented might include, for example, party decorations, party game supplies and the like. As depicted in Fig. 3, preferably the user is presented with a selection to show the recipe 324. In response to such selection 324, the recipe is presented 328 (Fig. 3C) preferably with pertinent related information such as preparation time 332, cook time 334, and/or nutritional information 336 and the like. In the depicted  
20 embodiment, the user is also presented with an advertisement 338 which is preferably related to the user's selection. In this case, the selected recipe is an Italian style recipe and the advertisement is for Italian food. The user is presented with an option to print the recipe locally 342, perform a search 344 or obtain the current stored grocery list for the user 346. In response to selecting the grocery list option 346, the user is presented with  
25 a grocery list 348 (Fig. 3D) which not only shows the ingredients for the selected meal 350, preferably with check boxes or similar options for selecting or deselecting individual items for inclusion on the grocery list 352 but also a list of items usually or frequently purchased by the user 354 (either entered by the user or deduced based on the user's previous shopping history), preferably with each item being individually selectable 356  
30 for inclusion on the grocery list as desired. In the depicted embodiment, the user is also provided with an area 358 for entering additional items and provided the option to add

items to the list 362 or to clear the current list 364. Preferably the user is provided with an option to obtain a final shopping list 366. In response to selection of final shopping list 366, the user is provided with a display of a final shopping list 368 (Fig. 3E). A message is provided 372 informing the user that this list will be available at any participating store location and inviting the user to request information regarding store locations if desired. The list 368 includes those items selected, e.g. by check boxes 352, 356 and/or entered separately 358. In the depicted embodiment, the shopping list also includes an advertisement 374 and an invitation to request related coupons 376. Preferably the advertisement 374 is targeted, e.g. as described above. The user is presented an option to edit the shopping list 378 or send the shopping list 382 in which case the shopping list is stored in a fashion so that it will be available at a kiosk in any participating retail location, e.g. for print out. A thank you screen 384 (Fig. 3F) invites the user to find a nearby store location, e.g. by entering a zip code 386, in response to which locations of participating stores are displayed 388 (Fig. 3G). In the depicted embodiment, the user is invited to make other selections such as for party planning 392 or holiday ideas 394.

In the embodiment depicted in Figs. 4A through 4F, an initial display 412 allows users to obtain participating store locations 414, sign up as preferred customers 416 or select a meal planner option 418. In response to selection of meal planning, a user may search recipes 418, make other selections 422a, b, c or request a recipe for a featured meal 424. The depicted recipe 428 may be printed if desired 442 or the user may request the grocery list 446 (Fig. 4C) in response to which a shopping list is displayed 448 with selectable items in the featured meal 452 and a usual list 456 with the user being permitted to request a final shopping list 466. In response to requesting the final shopping list, the user is provided with a display of a list 468 which may be sent 482 (Fig. 4E) to be stored so it is accessible at participating retail locations. A "thank you" display 484 provides options 492, 494 for further meal planning or shopping list actions.

Fig. 5 depicts a flow of screen information and options for a retail-location kiosk. In the depicted embodiment, the kiosk, when idle, i.e. in attract mode 512 cycles among various attract displays 514a, 514b, 514n. One typical attract display is depicted in Fig. 6A. The attract display 612 includes an advertisement 614 and instructions for

identifiable users 616. In response to a user being detected, such as by a touchscreen, proximity detector or the like 516, if the user is not identified, e.g. by frequent shopper card or is otherwise anonymous 518, an anonymous or new user screen is displayed 618 (Fig. 6B) allowing the user to not only select meal planning 622, but also select various purchase offers such as book and music offers 624, travel offers 626, "special" offers 628 and the like. When the user is a known user 522, the display 632 (Fig. 6C) may be personalized 524 such as by showing a personalized welcome 634, information regarding frequent shopper or club points 636, print-out of personalized offers or specials 638 and displays 526 an advertisement 642 such as an animated or motion picture advertisement 642 which may, if desired, be selected based on the identity or known characteristics of the known user. Preferably the known user is provided with options 622, 624, 626, 628 similar to those presented to an anonymous user, as well as personalized offers 632 (Fig. 6D). In one embodiment, users are presented with an opportunity to select areas of interest 634a, b, c, d on a personalized page 636 (Fig. 6E).

In response to selection of "books and music" 624, the user is presented with a music display 638, with options to view various selections 640, discount information 642 and an option to choose to review the book menu 646, as well as (preferably continuous or "running") options to return to the main menu 648, quit 650, or review the current "shopping cart" 652 (i.e., a list or display of items thus-far selected for purchase in the current session). In response to selecting one of the music offers 640, a detailed display of the selected item is provided 654 (Fig. 6G). The display may include a review 656, price and discount information 658, bonus or club point information 660 and the like. The user may have an option to return to the last menu display 662 and/or an option to purchase the displayed items 664 (i.e. to add it to the "shopping cart"). In response to selection of an option to view the book menu 666 (Fig. 6H), the user may select among various book options 668, in response to which similar detailed displays may be provided 670 (Fig. 6I).

If the user selects (or is targeted with) a travel option 626, the user is presented with a menu 672 of various travel offers 674. In one embodiment, a detailed display 676 (Fig. 6K) is provided in response to selection of a travel menu item. In the depicted embodiment, the user is not provided with an option to purchase the travel item, but

rather to print the offer 678. Similarly, in response to selection of a special option 628, the user is presented with a special menu 680 and in response to selection of a menu item 682, the user is presented with a detailed offer display 684 (Fig. 6M). In response to selection of the meal planning option 622, the user is presented with a recipe display 686 with a variety of selectable items 688 (Fig. 6N). In response to a selection of "recipe display", the user is presented with a recipe 690 and an option to print the recipe 692, preferably with a discount or other offer associated with such printing 694 (Fig. 6P). In response to the selection of the "shopping cart" item 652, the user is provided with a display of the various items which have been thus-far selected 696 (Fig. 6Q), preferably including price, bonus or shopper points, an option to delete an item, tax information, summary savings and point information and a checkout option 697. In response to the checkout selection 697, the user is provided with a purchase screen display 698, e.g. instructing the user how to enter credit card or debit card information to complete the transactions and a "thank you" screen 699 (Fig. 6S) provides information on how the order will be shipped.

Fig. 7 depicts a display of the screen that can be used for remotely performing meal planning or list processing, e.g. on a home computer 136. In the embodiment of Fig. 7, the user is presented with a featured recipe 712 which can serve as the basis for obtaining further detail 714. The user can select to obtain information about privacy policies or procedures 716, frequently asked questions 718 and the like. In addition to options for accessing the shopping list 746, the user can access a personally stored cookbook 748, a personal meal plan 752, can access and/or edit the user's profile 754, can access a meal-of-the-day 756 and/or a recipe center 758.

In light of the above description, a number of advantages of the present invention can be seen. The present invention provides in-store shopping assistance to customers. By providing such shopping assistance at the retail location, shopping assistance can be supplied on the basis of the most up-to-date information, including current information about the shopper and/or current information about the retail location. By providing in-store access to previously-stored shopping lists or similar information, shoppers can visit any retail location offering access to the shopping assistance system (such as any member of a chain of stores or a group of stores or chains) and have access to shopping

information or assistance without the need to remember to develop and bring a separate written shopping list and the like. Providing an in-store facility for accessing a household's common shopping list, potentially when combined with the ability to modify a household list as purchases are made, can avoid situations such as one member of a household purchasing items that have already been purchased by another household member or a household member neglecting to purchase an item on the mistaken belief that the item has already been purchased by another household member. Providing shopping assistance facilities in the retail location makes it possible to provide promotions or advertising, especially targeted advertising, at a location and time when such promotions or advertising are likely to be most effective, such as in-store, at the beginning of a shopping trip. The present invention makes it feasible to readily maintain security of coupons (e.g. by outputting from a kiosk only after identification of a user) even though coupons may be allocated in response to Internet or other potentially insecure communications. This reduces the risk of coupons being stolen, copied, modified, forged or misused as may occur when coupons are provided through the mail, through print media and the like.

A number of variations and modifications of the present invention can be used. It is possible to use some features of the invention without using others. For example, it is possible to provide in-store shopping assistance without providing access to some or all features of the shopping assistance facility to an home computer or other non-store location. Although embodiments of the invention have described an input/output device which is coupled to another computer, such as an in-store computer, point of sale computer and the like, it is also possible to implement some or all features of the invention by a single stand alone kiosk or other device which includes both input/output facilities and a computer. Although some embodiments have been described in the context of using a home computer for accessing some aspects of shopping assistance, e.g., via the Internet, it is also possible to provide other devices such as dedicated-purpose, or limited-function Internet appliances, including appliances configured for exclusively, initially and/or preferentially accessing the shopping assistance web site or program, preferably associated with a retail location, store chain, group of stores, shopping assistance provider and the like, such as by providing branded Internet or other

appliances and/or distributing Internet or other appliances and/or computers to some or all customers (such as preferred customers, frequent shopper customers and the like). Some or all recipes, rather than being printed at the kiosk 124 can be stored for later use such as being stored in the database 122 or in a memory accessible via the Internet, (in  
5 a wired or wireless fashion) such as from the shopper's home computer 136, e.g., for viewing and/or printout. Although, as described above, the database 122 may be located at the location of the web host computer 132, in other embodiments, the database 122 may be otherwise located or may be distributed such as being stored in a plurality of different computers or storage devices at different locations. Although, in one  
10 embodiment, shoppers using the system are always provided with a shopper identifier (even if this is only a temporary shopper number), in some embodiments, the input/output device 124 can provide functions such as shopping assistance functions, even if the shopper does not wish to receive, or use, a frequent shopper number 218 or does not wish to provide shopper information or preferences 222. Although in one  
15 embodiment, shoppers may edit shopping lists using the in-store kiosk, in other embodiments, editing of shopping list is performed only remotely, with the (previously input or edited) shopping list being printed or otherwise output from the retail location kiosk. In one embodiment, the shopping list is output from the retail-location kiosk substantially immediately following customer identification.

20 Although embodiments have been described herein using the example of grocery shopping, the invention can be used in connection with other types of shopping, such as a computer which suggests hardware shopping list items and/or brands in response to selection or input of a home improvement project; plant shopping list items, species, brands, etc in response to selection of a gardening or landscaping project, and the like.

25 Although some embodiment have been illustrated with examples involving a shopper and/or a frequent shopper identifier, the present invention can also be implemented with respect to groups, such as when a frequent shopper number or other identifier is associated with two or more members of a family or other group.

30 The present invention, in various embodiments, includes components, methods, processes, systems and/or apparatus substantially as depicted and described herein, including various embodiments, subcombinations, and subsets thereof. Those of skill in



the art will understand how to make and use the present invention after understanding the present disclosure. The present invention, in various embodiments, includes providing devices and processes in the absence of items not depicted and/or described herein or in various embodiments hereof, including in the absence of such items as may have been  
5 used in previous devices or processes, e.g. for improving performance, achieving ease and/or reducing cost of implementation. The present invention includes items which are novel, and terminology adapted from previous and/or analogous technologies, for convenience in describing novel items or processes, do not necessarily retain all aspects of conventional usage of such terminology.

10 The foregoing discussion of the invention has been presented for purposes of illustration and description. The foregoing is not intended to limit the invention to the form or forms disclosed herein. Although the description of the invention has included description of one or more embodiments and certain variations and modifications, other variations and modifications are within the scope of the invention, e.g. as may be within  
15 the skill and knowledge of those in the art, after understanding the present disclosure. It is intended to obtain rights which include alternative embodiments to the extent permitted, including alternate, interchangeable and/or equivalent structures, functions, ranges or steps to those claimed, whether or not such alternate, interchangeable and/or equivalent structures, functions, ranges or steps are disclosed herein, and without intending to publicly dedicate any patentable subject matter.

What is claimed is:

1. A shopping assistance apparatus for use by a shopper at a retail location, comprising:
  - an input and output device for receiving input from said shopper and providing output to said shopper;
  - a first computer, coupled to said input and output device, said computer programmed to
    - provide at least first information, to said output device, informing said shopper of at least a first item for sale in said retail location;
    - receive at least a first selection, from said shopper, of an item desired for purchase; and
    - output a shopping list, including at least said first selection;wherein at least said input and output device is located at or in said retail location.
2. Apparatus, as claimed in claim 1, wherein said computer is programmed to provide at least a first purchase suggestion to said shopper, using said output device.
3. Apparatus, as claimed in claim 2 wherein said first purchase suggestion is selected from the group consisting of:
  - at least a first suggested recipe; or
  - at least a first suggested meal.
4. Apparatus, as claimed in claim 2, wherein said first purchase suggestion includes a particular brand of product, without said particular brand being input or selected by said shopper prior to said suggestion being output.
5. Apparatus, as claimed in claim 2, wherein said first purchase suggestion is output in response to the shopper's input or selection of a shopping list item, a recipe or a meal.
6. Apparatus, as claimed in claim 1 wherein said computer is programmed to provide at least first personalized information in response to input of a shopper identifier.
7. Apparatus, as claimed in claim 6, wherein said shopper identifier includes a frequent shopper number of said shopper at said retail location.

8. Apparatus, as claimed in claim 6 wherein said personalized information is selected using shopper information stored in a database.

9. Apparatus, as claimed in claim 8 wherein said database includes information regarding previous purchases by said shopper.

10. Apparatus, as claimed in claim 8, wherein said database includes information previously input by said shopper.

11. Apparatus, as claimed in claim 8, wherein said database includes information selected from input previously provided by said shopper using a computer different from said first computer.

12. Apparatus, as claimed in claim 1 wherein said computer outputs at least first coupon information.

13. Apparatus, as claimed in claim 12 wherein said first coupon information is output by a printer.

14. Apparatus, as claimed in claim 12 wherein said first coupon information is output in electronic form, for use upon check-out.

15. A method for assisting shopping by a shopper at a retail location, comprising:

providing an input and output device at or in said retail location

receiving input from said shopper and providing output to said shopper using an input and output device ;

providing at least first information, to said output device, informing said shopper of at least a first item for sale in said retail location;

receiving at least a first selection, from said shopper, of an item desired for purchase; and

outputting a shopping list, including at least said first selection.

16. A method, as claimed in claim 15, further comprising providing at least a first purchase suggestion to said shopper, using said output device.

17. A method, as claimed in claim 16 wherein said first purchase suggestion is selected from the group consisting of:

at least a first suggested recipe; or

at least a first suggested meal.

18. A method, as claimed in claim 16, wherein said first purchase suggestion includes a particular brand of product, without said particular brand being input or selected by said shopper prior to said suggestion being output.

19. A method, as claimed in claim 16, wherein said first purchase suggestion is output in response to the shopper's input or selection of a shopping list item, a recipe or a meal.

20. A method, as claimed in claim 15 further comprising providing at least first personalized information in response to input of a shopper identifier.

21. A method, as claimed in claim 20, wherein said shopper identifier includes a frequent shopper number of said shopper at said retail location.

22. A method, as claimed in claim 20 wherein said personalized information is selected using shopper information stored in a database.

23. A method, as claimed in claim 22 wherein said database includes information regarding previous purchases by said shopper.

24. A method, as claimed in claim 22, wherein said database includes information previously input by said shopper.

25. A method, as claimed in claim 22, wherein said database includes information selected from input previously provided by said shopper using a computer different from said first computer.

26. A method, as claimed in claim 15 further comprising outputting, from said input and output device, at least first coupon information.

27. A method, as claimed in claim 26 wherein said first coupon information is output by a printer.

28. A method, as claimed in claim 26 wherein said first coupon information is output in electronic form, for use upon check-out.

29. Apparatus for assisting shopping by a shopper at a retail location, comprising:

means for outputting, at or in said retail location, at least first information, informing said shopper of at least a first item for sale in said retail location;

means for receiving, at or in said retail location, at least a first selection, from said shopper, of an item desired for purchase; and

means for outputting, at or in said retail location, a shopping list, including at least said first selection.

30. Apparatus, as claimed in claim 29, further comprising means for providing at least a first purchase suggestion to said shopper.

31. Apparatus, as claimed in claim 30 wherein said first purchase suggestion is selected from the group consisting of:

at least a first suggested recipe; or

at least a first suggested meal.

32. Apparatus, as claimed in claim 30, wherein said first purchase suggestion includes a particular brand of product, without said particular brand being input or selected by said shopper prior to said suggestion being output.

33. Apparatus, as claimed in claim 30, wherein said first purchase suggestion is output in response to the shopper's input or selection of a shopping list item, a recipe or a meal.

34. Apparatus, as claimed in claim 29 further comprising means for providing at least first personalized information in response to a shopper identifier.

35. Apparatus, as claimed in claim 34 further comprising means for assigning a shopper identifier to a shopper.

36. Apparatus as claimed in claim 34 wherein said shopper identifier is input by said shopper in response to a prompt.

37. Apparatus, as claimed in claim 34, wherein said shopper identifier includes a frequent shopper number of said shopper at said retail location.

38. Apparatus, as claimed in claim 34 wherein said personalized information is selected using shopper information stored in a database.

39. Apparatus, as claimed in claim 38 wherein said database includes information regarding previous purchases by said shopper.

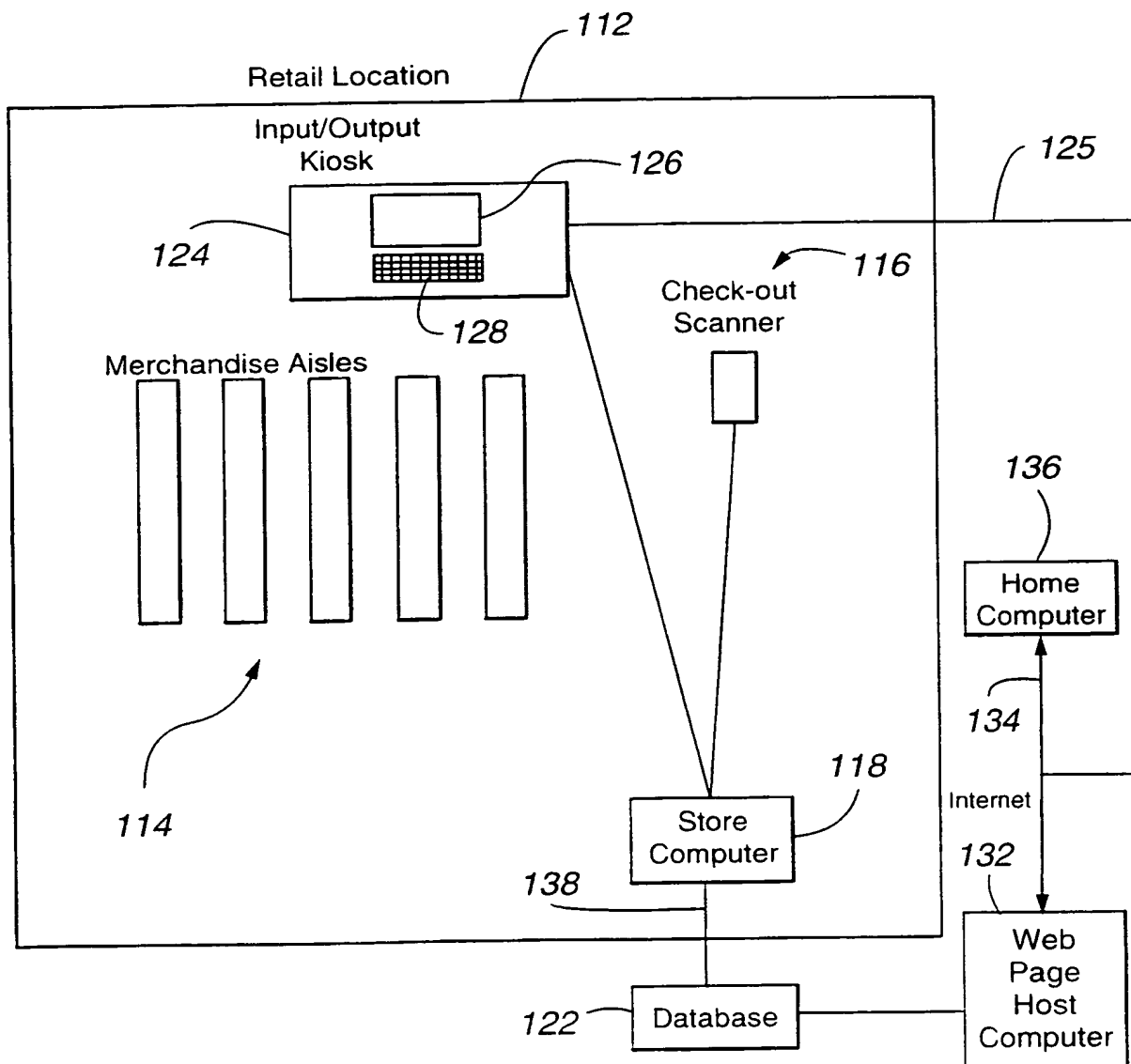
40. Apparatus, as claimed in claim 38, wherein said database includes information previously input by said shopper.

41. Apparatus, as claimed in claim 38, wherein said database includes information selected from input previously provided by said shopper using a computer different from said first computer.

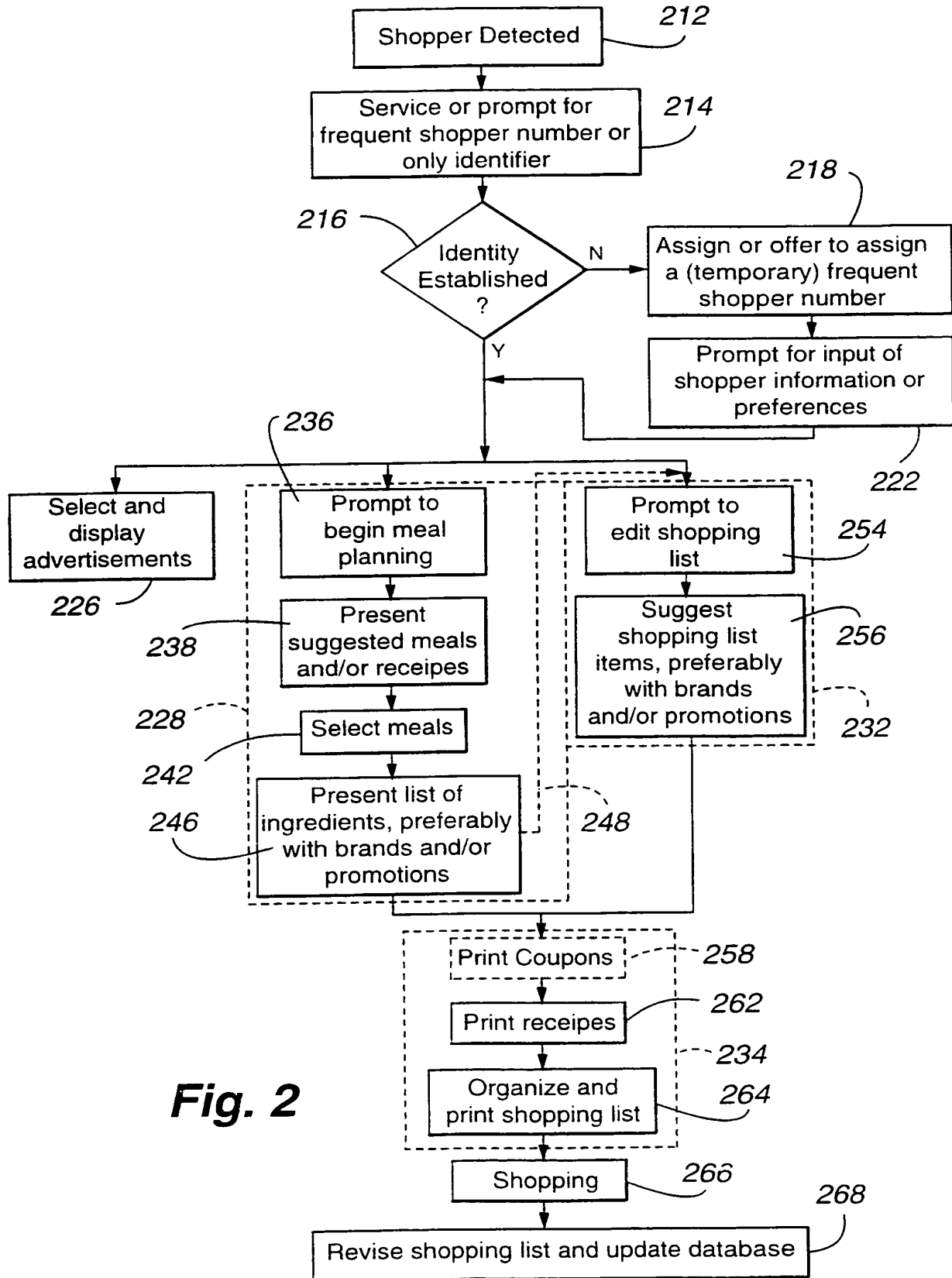
42. Apparatus, as claimed in claim 29 further comprising means for outputting, at or in said retail location, at least first coupon information.

43. Apparatus, as claimed in claim 42 wherein said first coupon information is output by a printer.

44. Apparatus, as claimed in claim 42 wherein said first coupon information is output in electronic form, for use upon check-out.

**Fig. 1**

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**Fig. 2**



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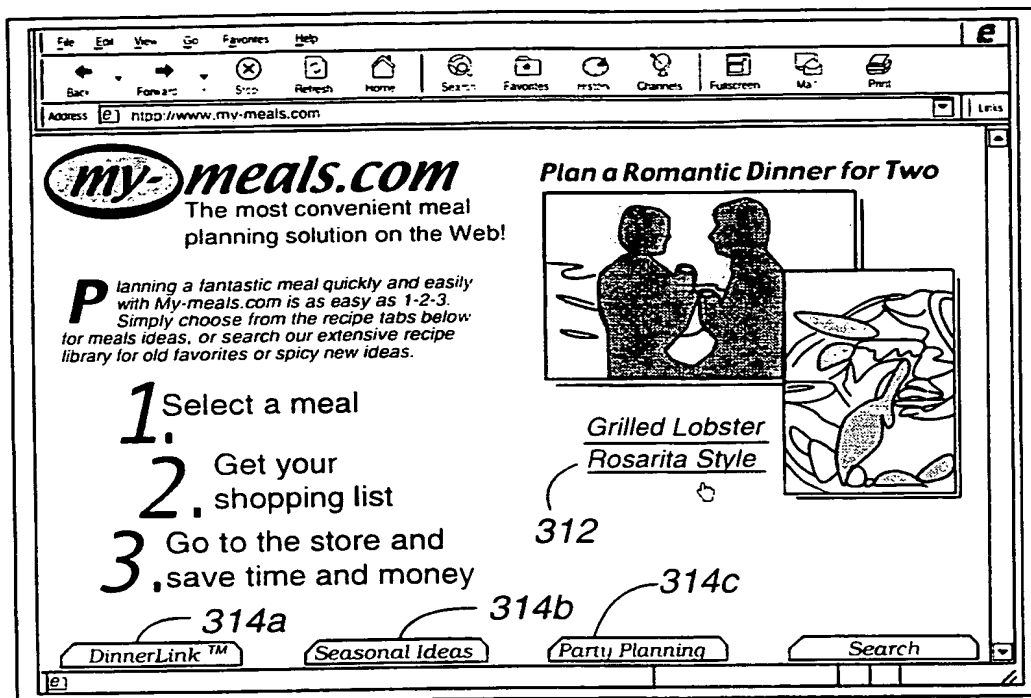


Fig. 3A

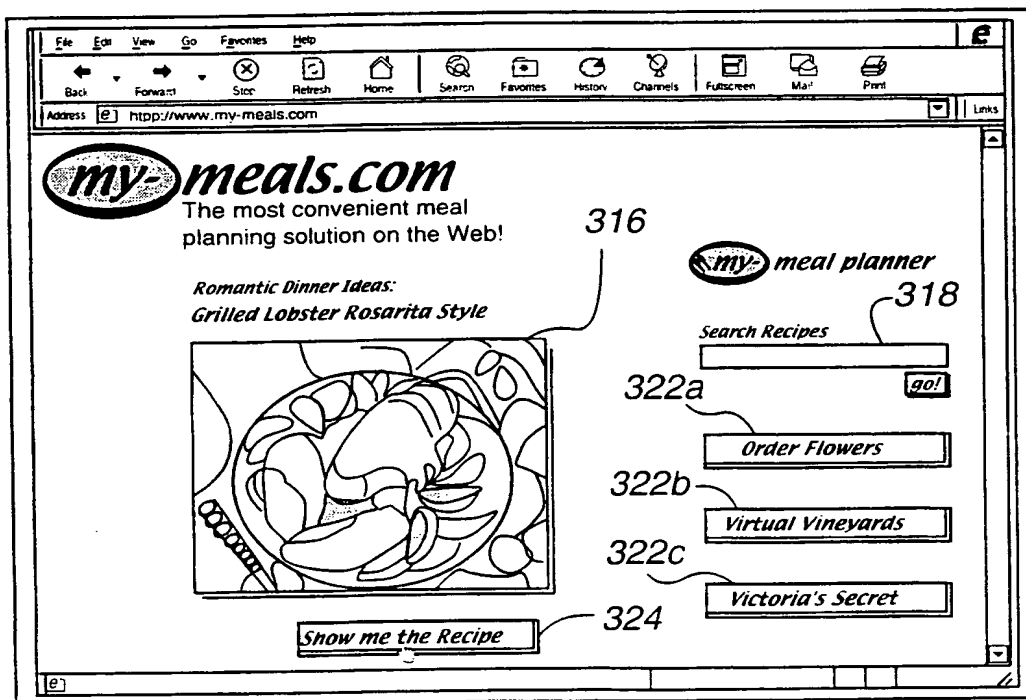


Fig. 3B

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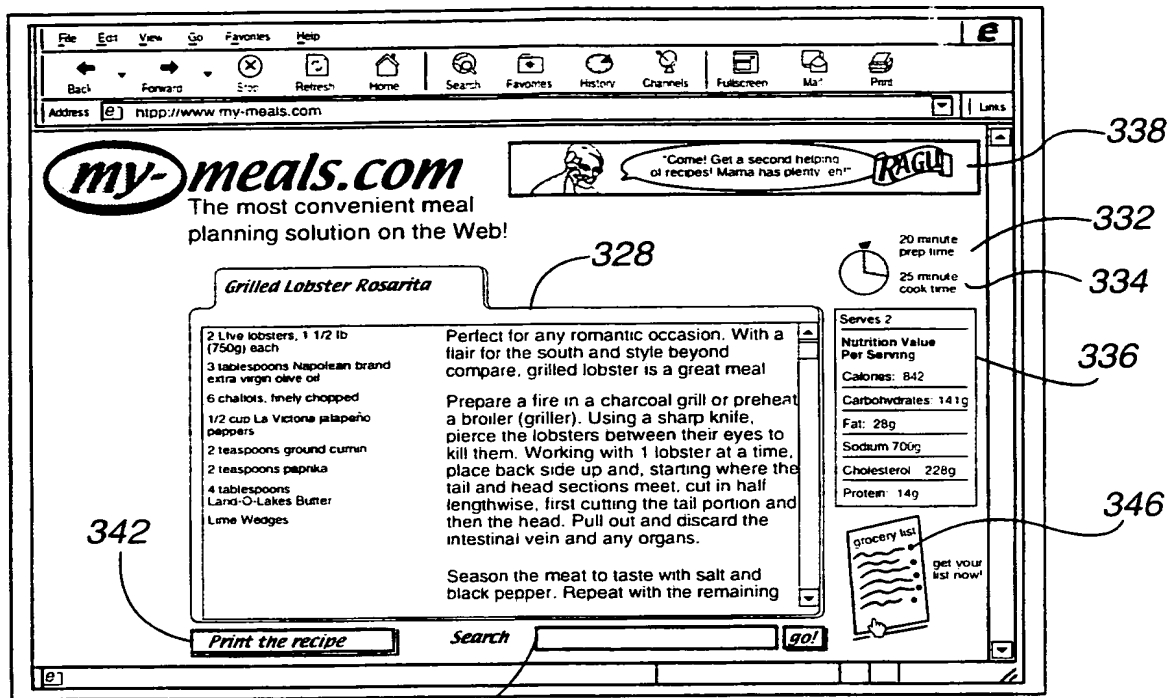


Fig. 3C

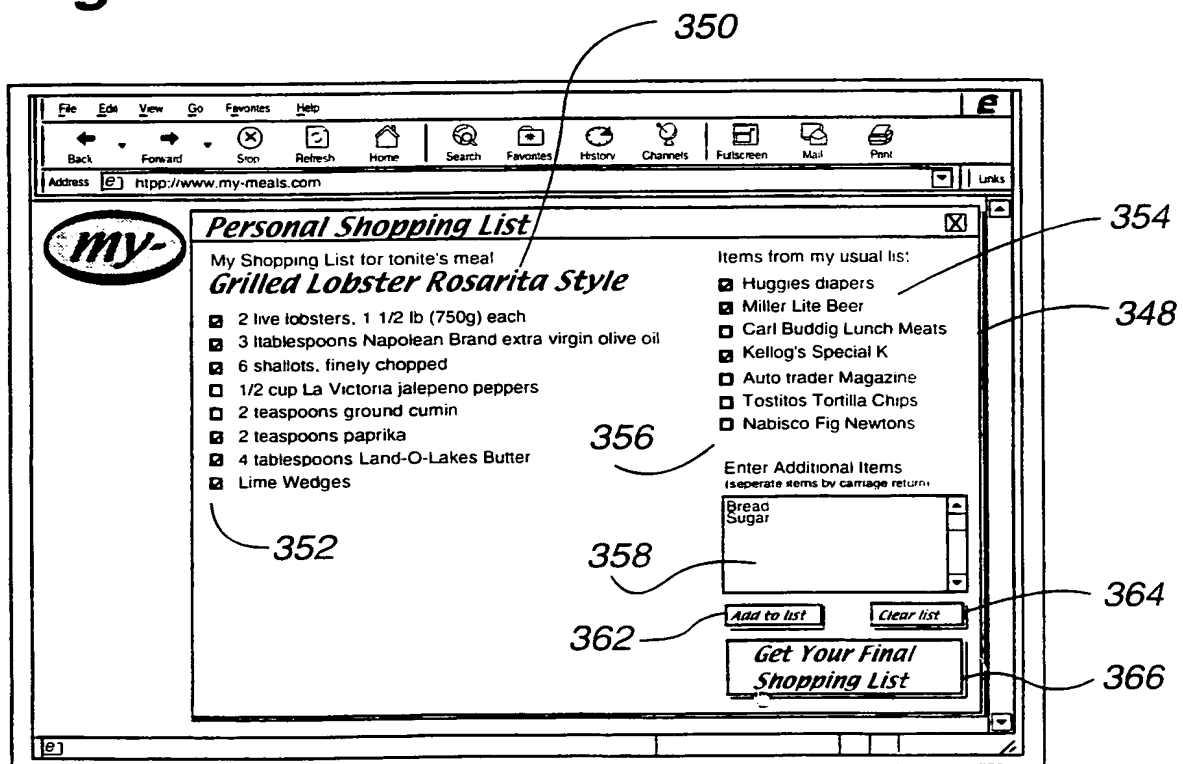
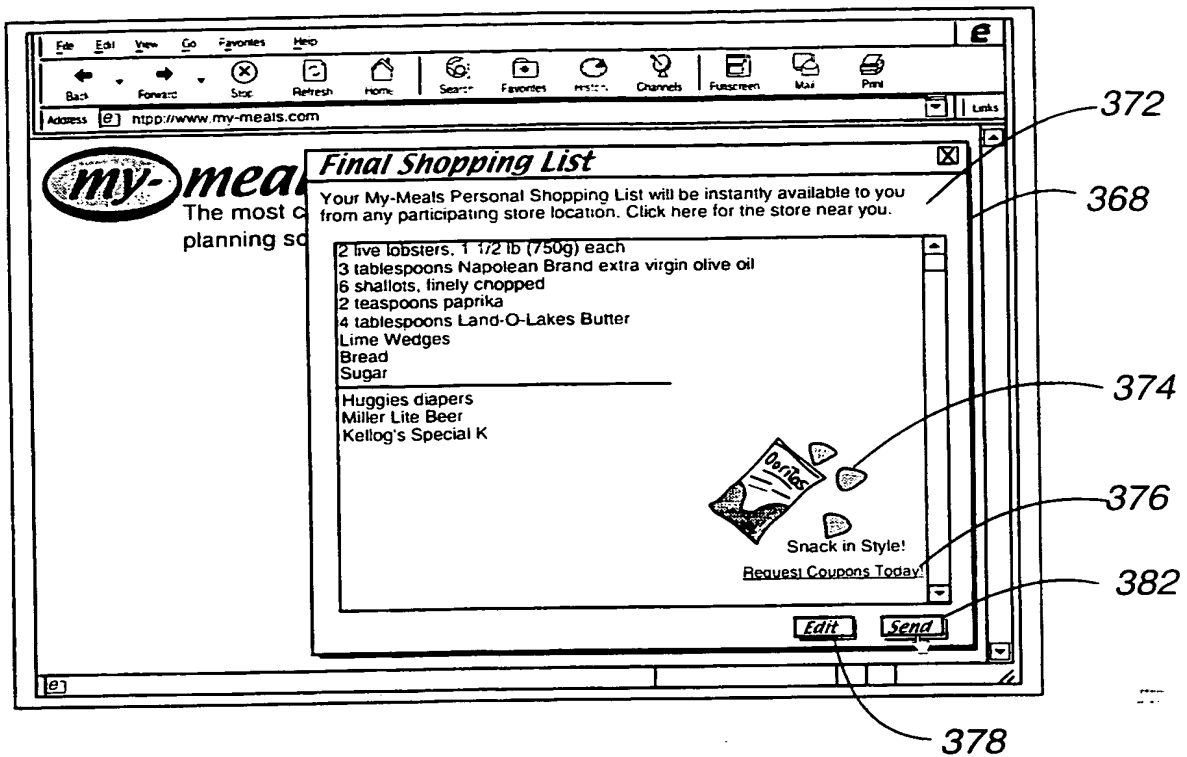
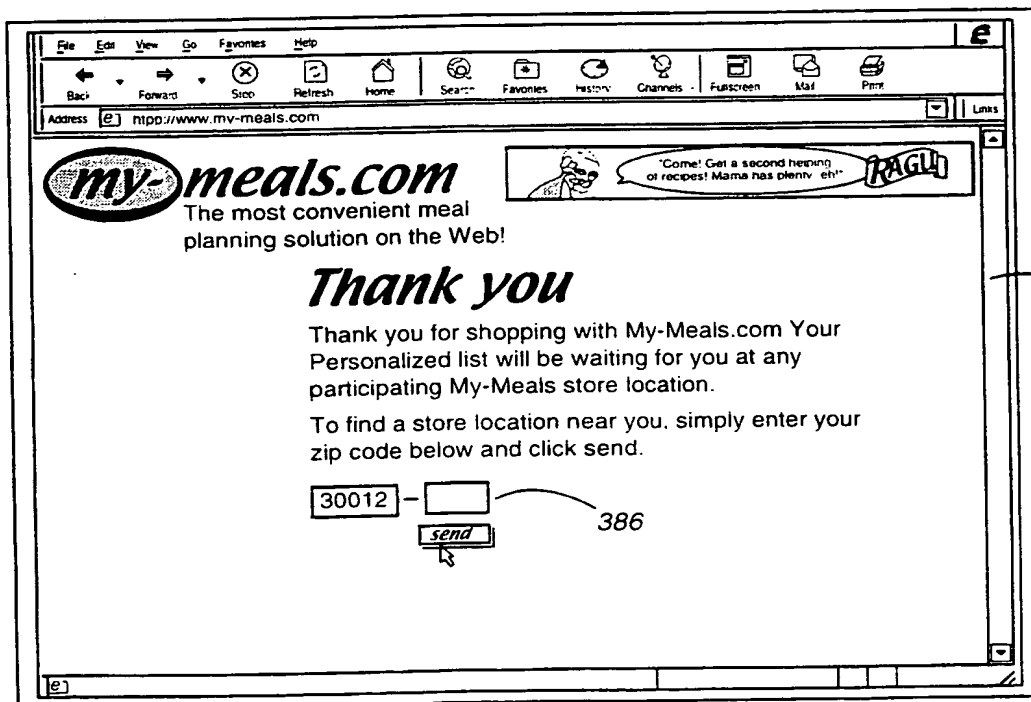


Fig. 3D

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**Fig. 3E****Fig. 3F**

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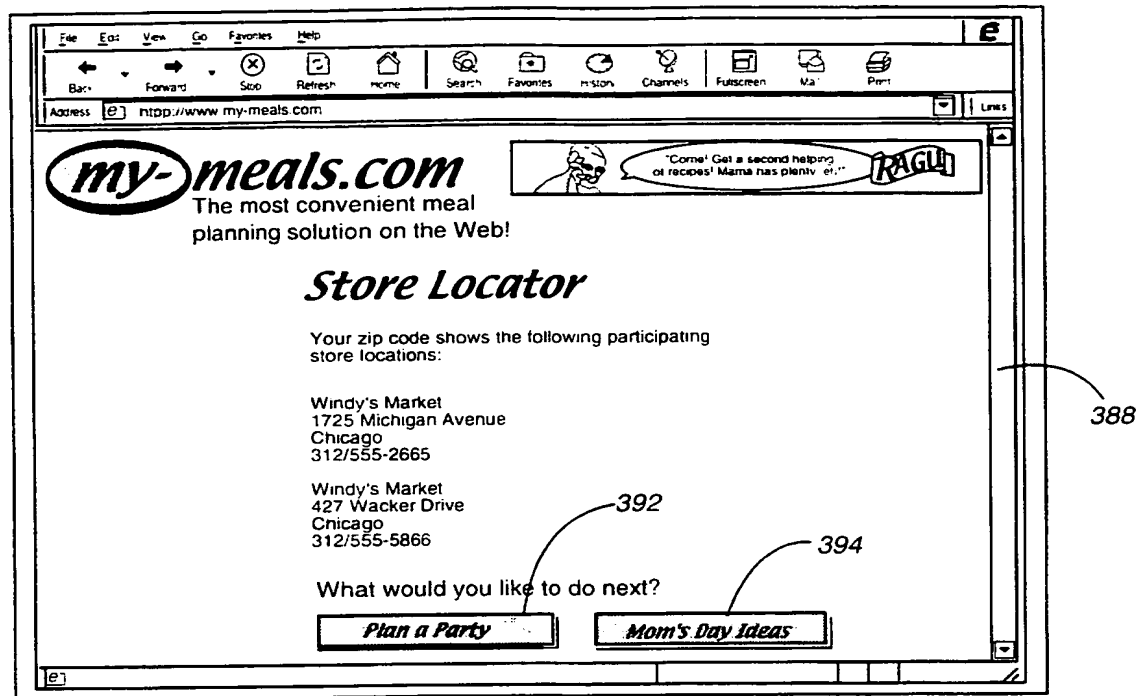


Fig. 3G

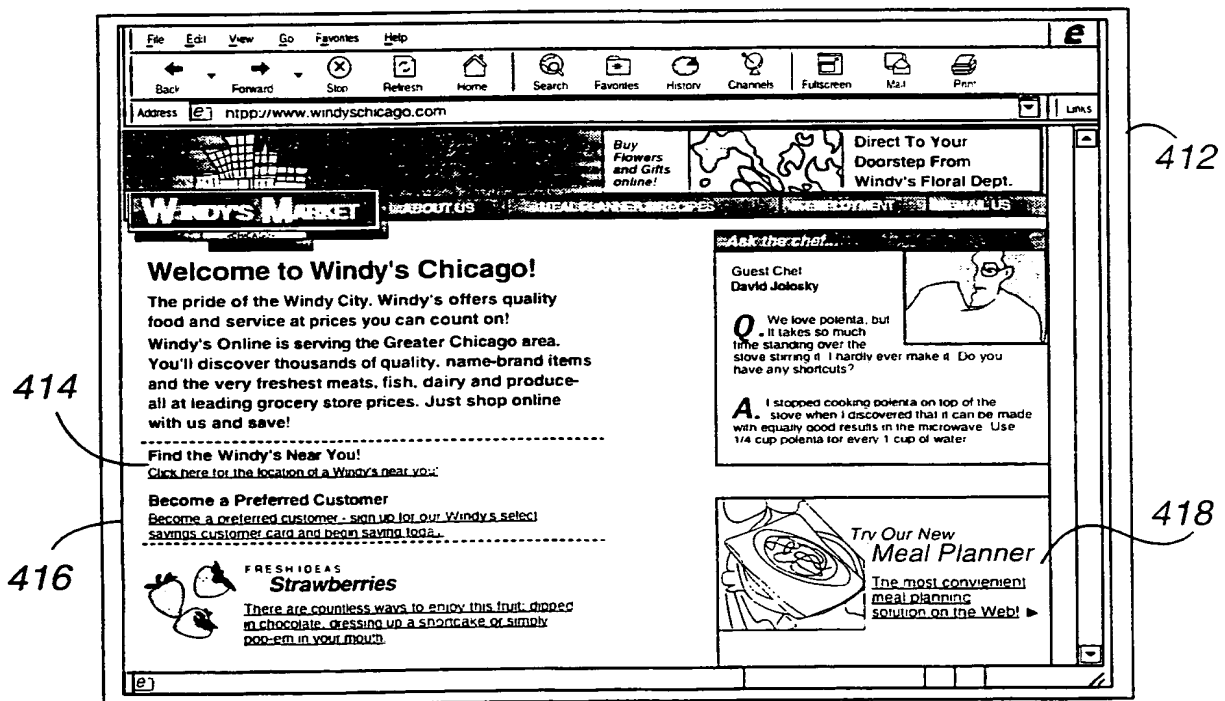


Fig. 4A

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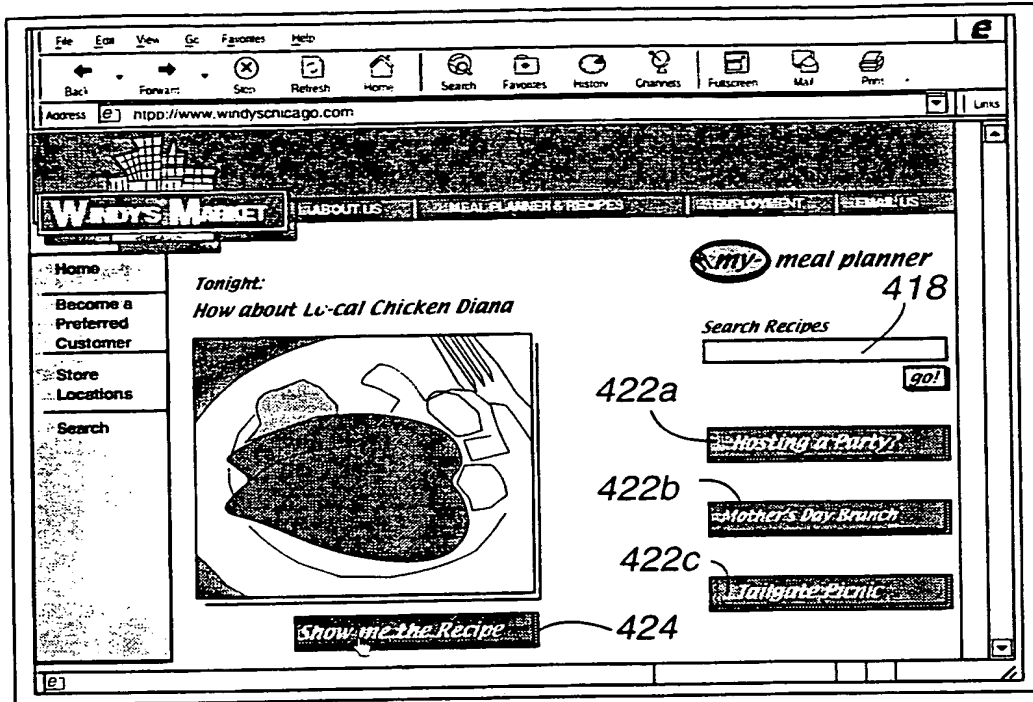


Fig. 4B

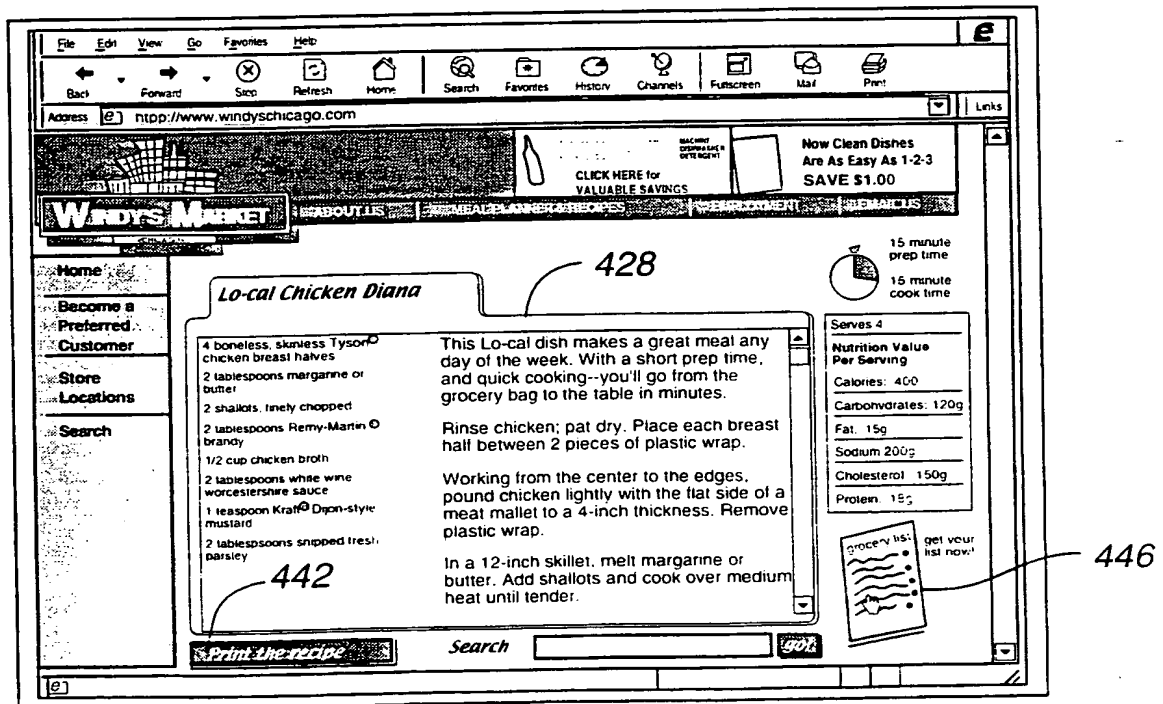


Fig. 4C

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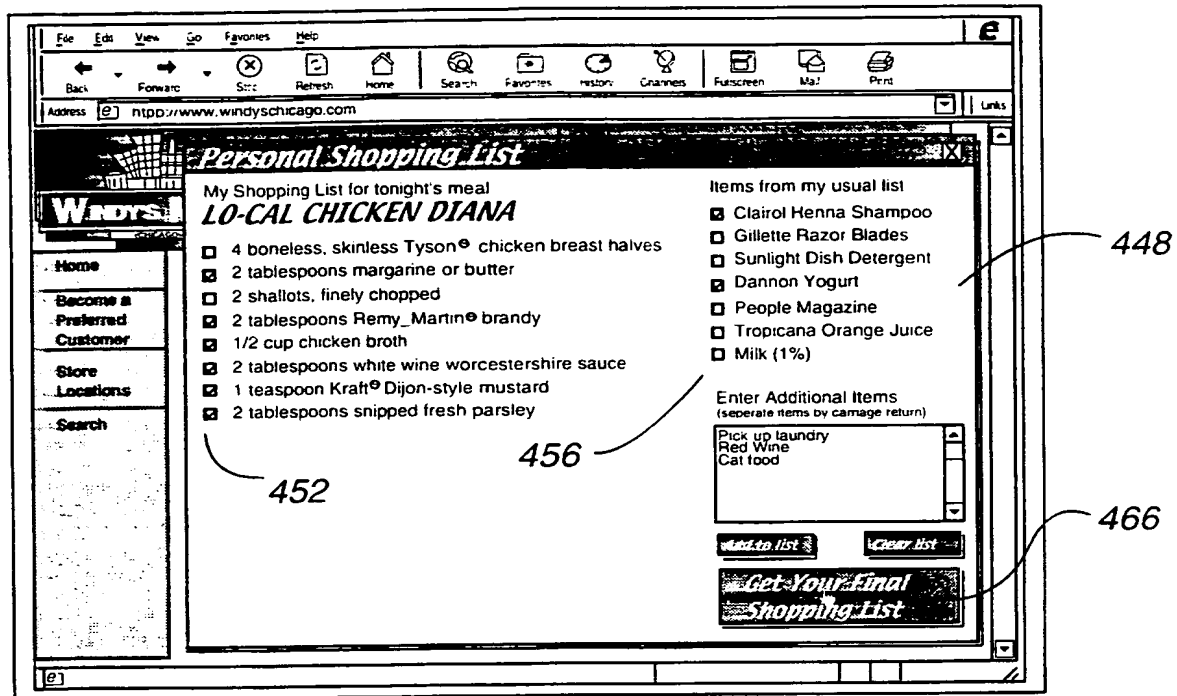


Fig. 4D

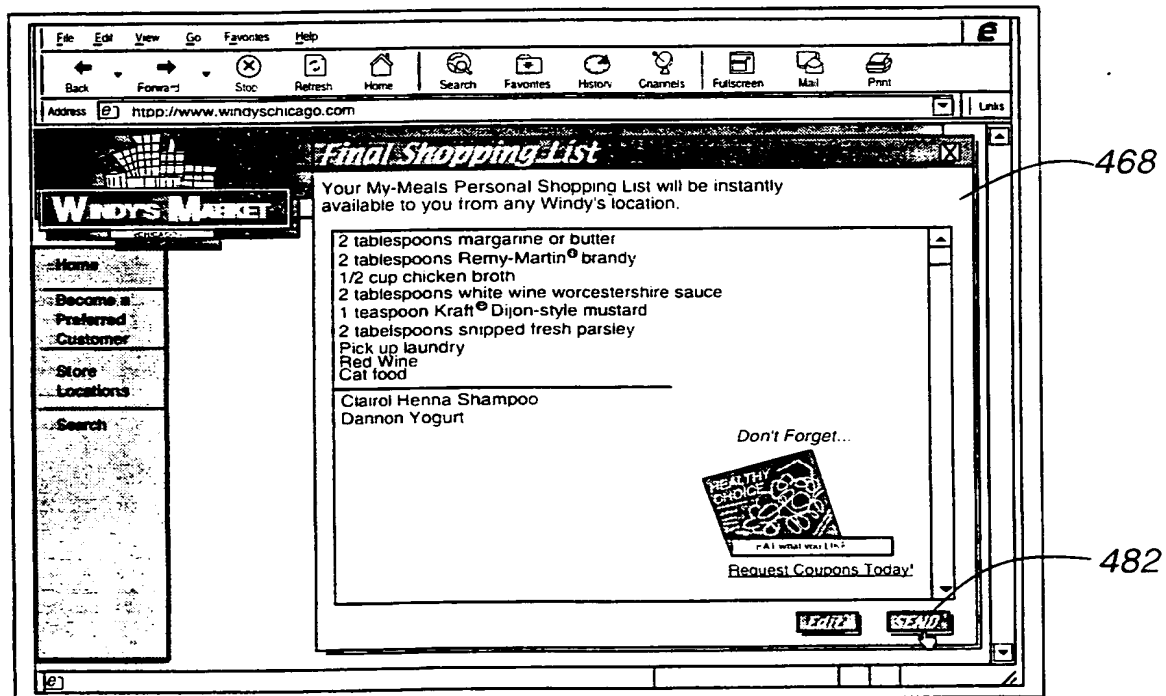
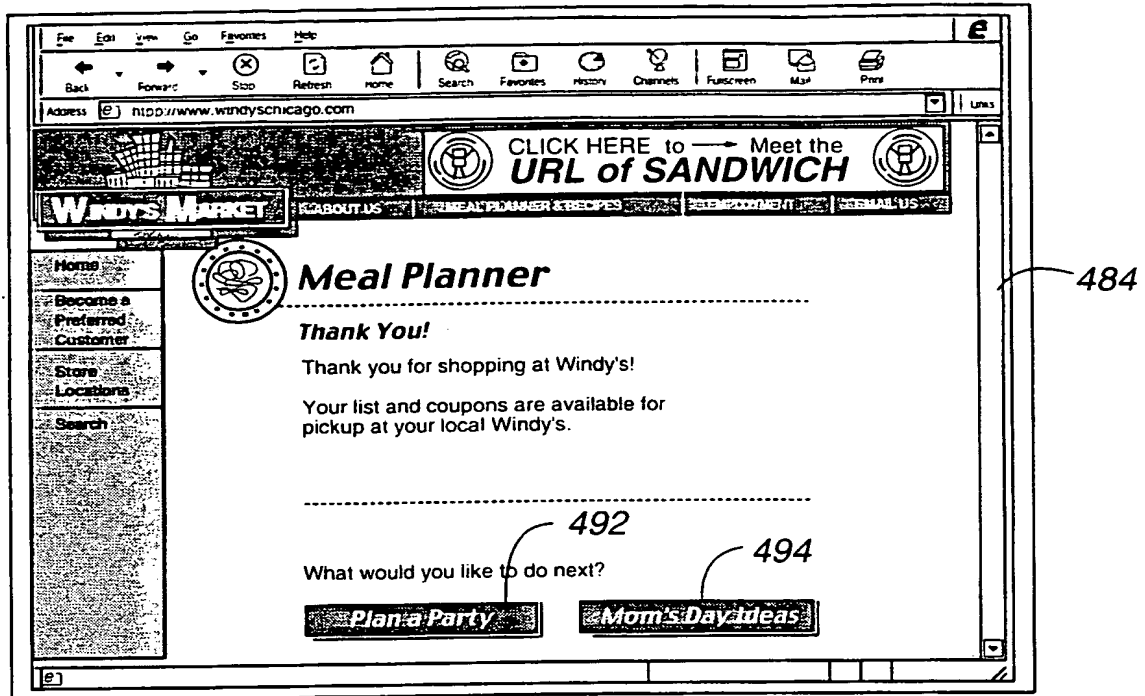
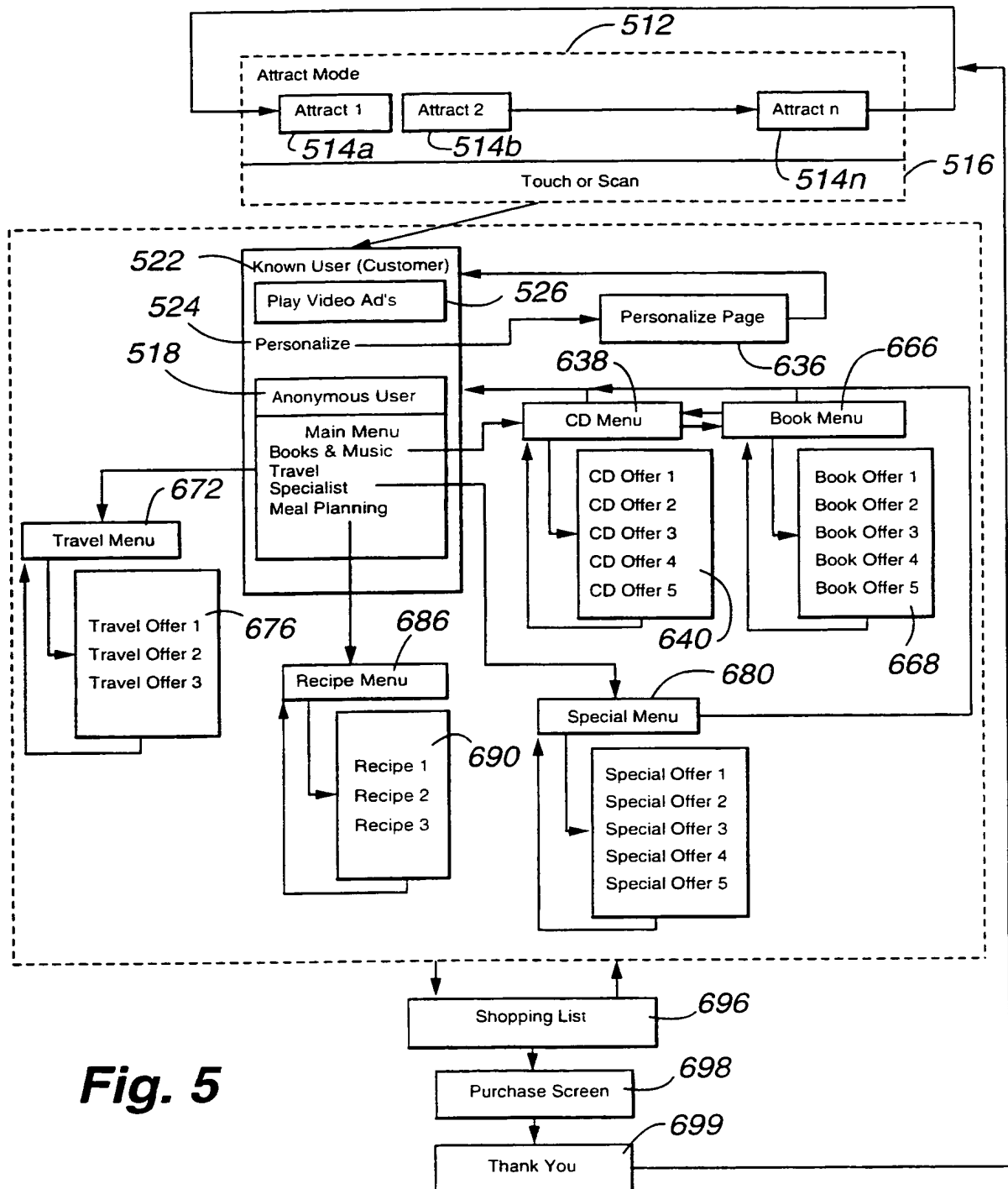


Fig. 4E

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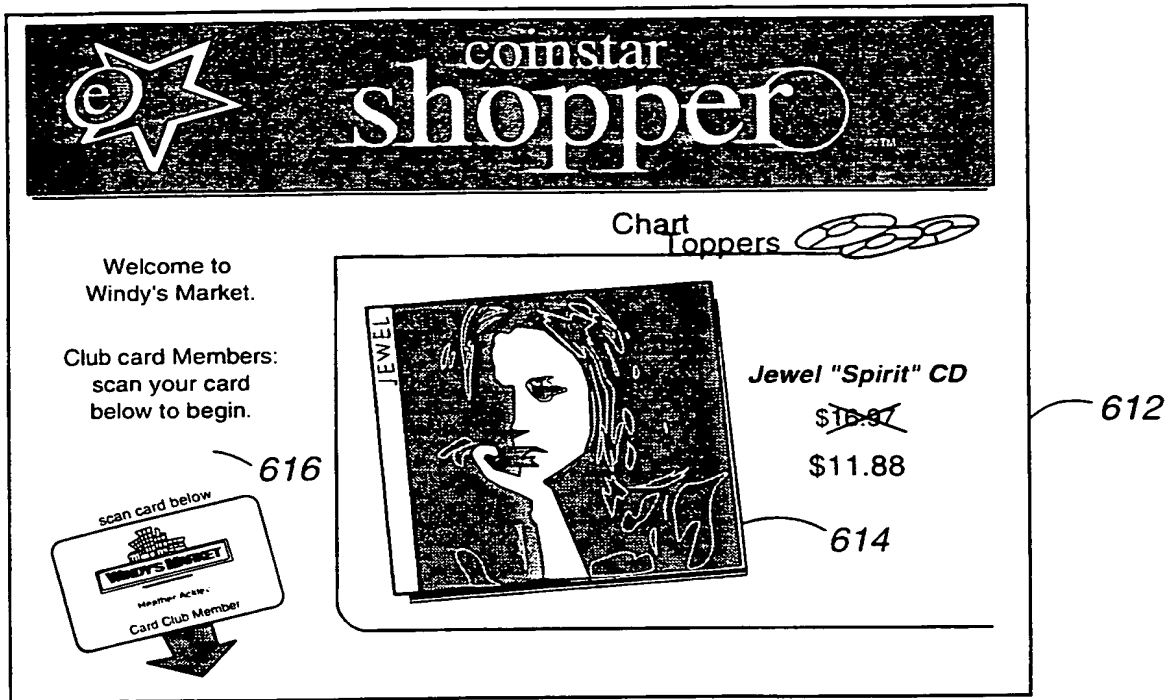
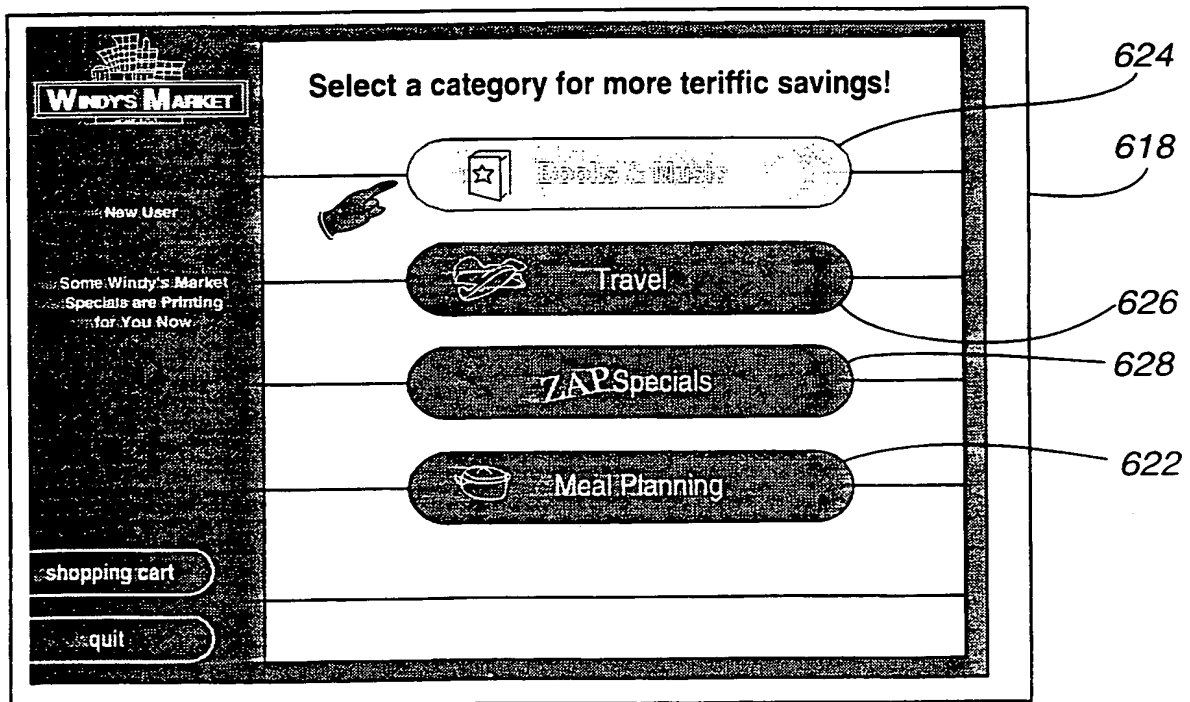
**Fig. 4F**

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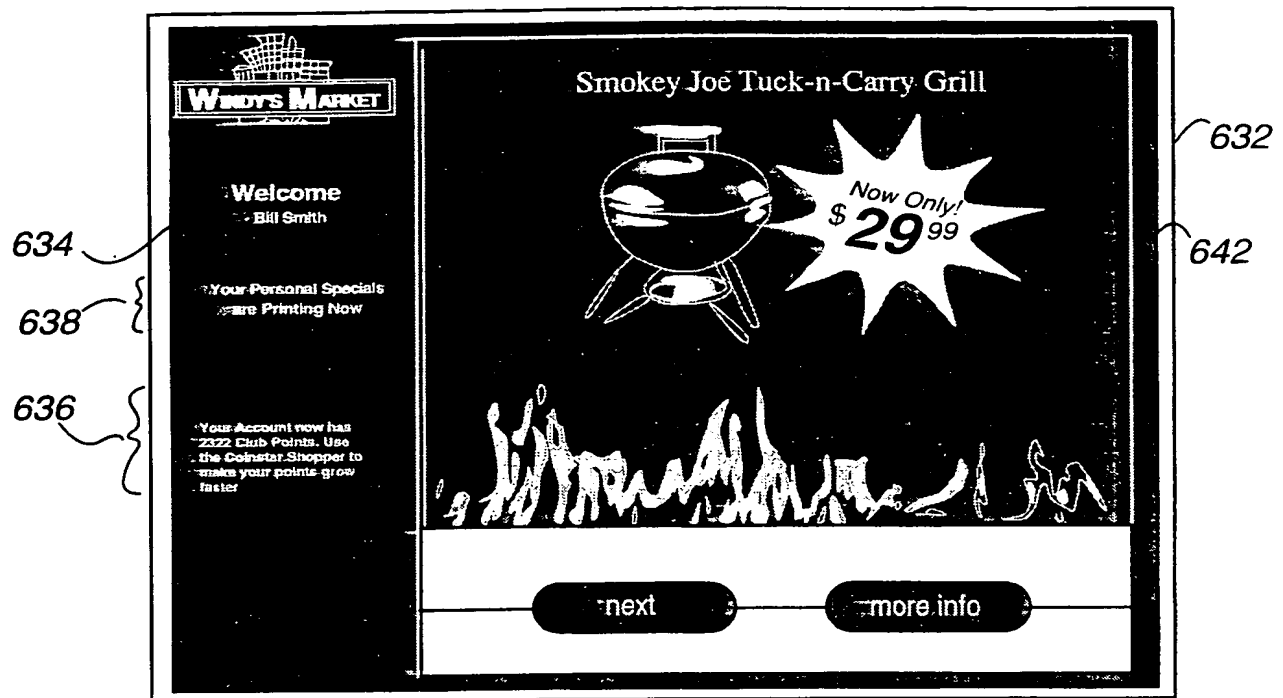
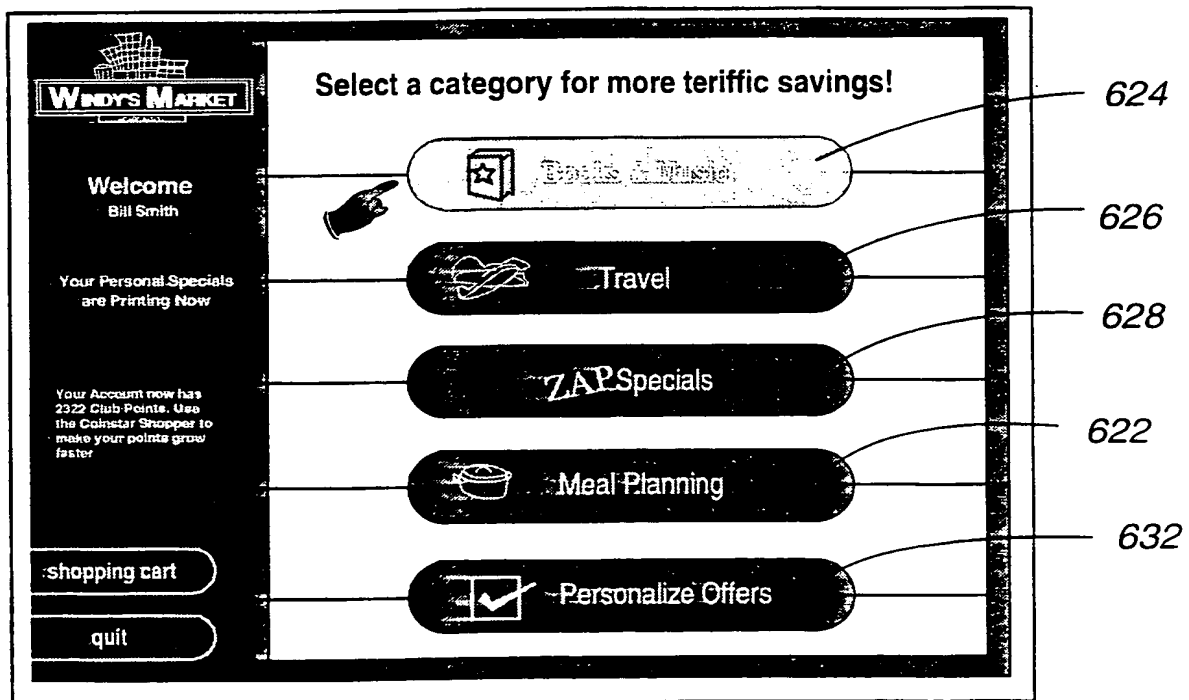
**Fig. 5**



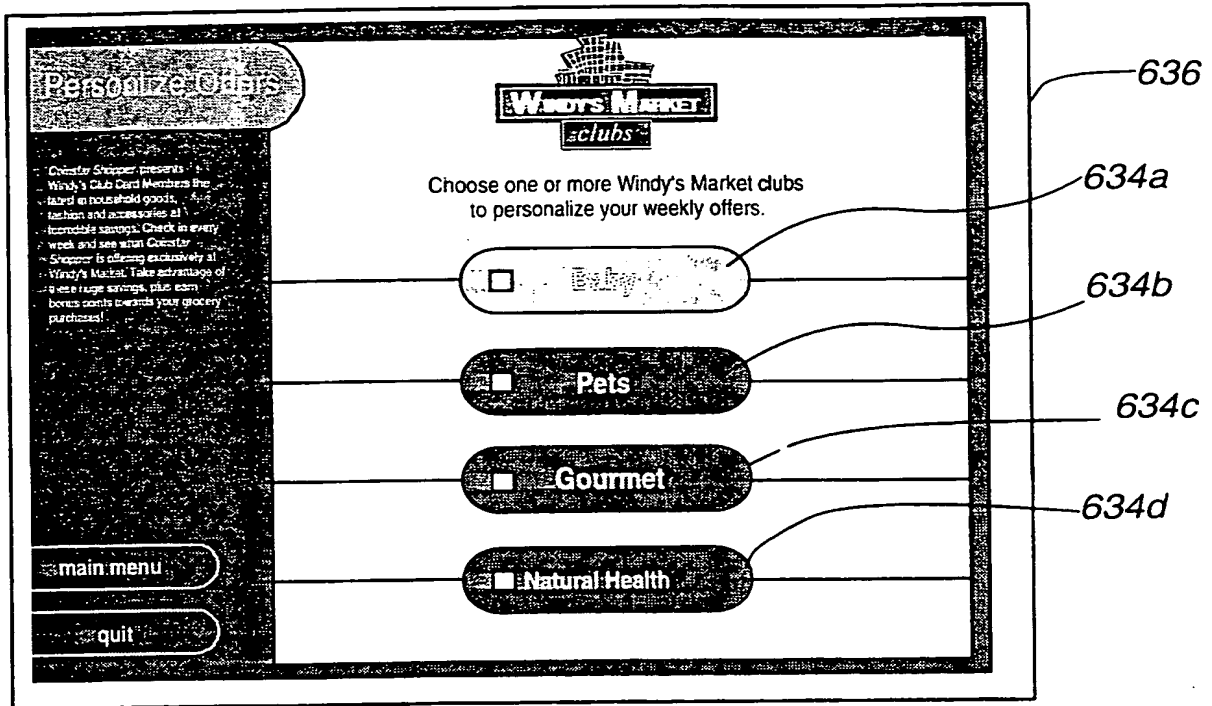
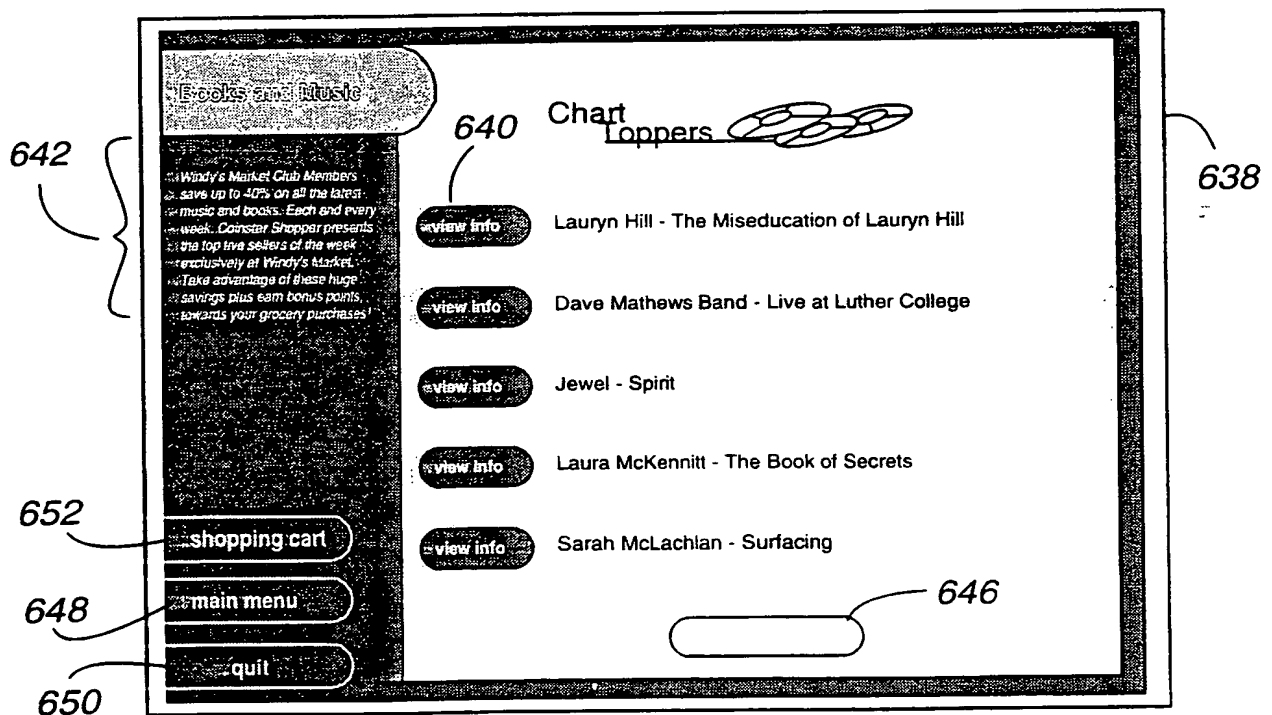
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**Fig. 6A****Fig. 6B**

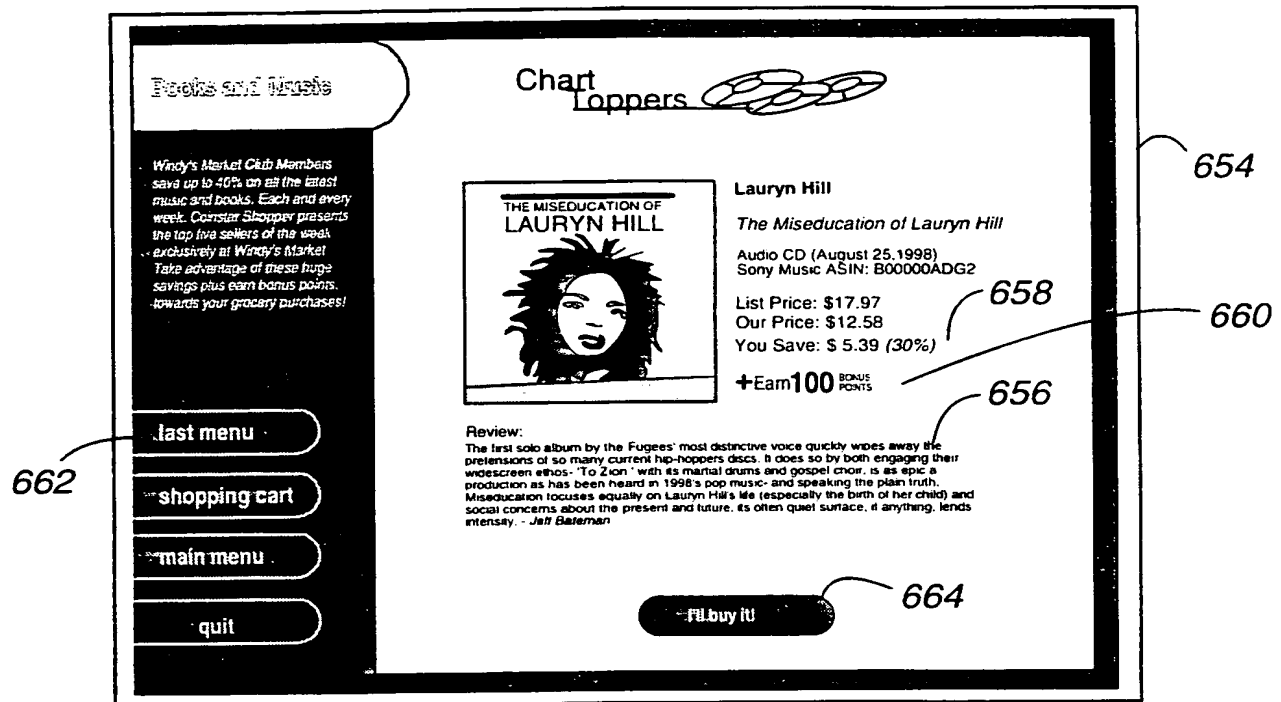
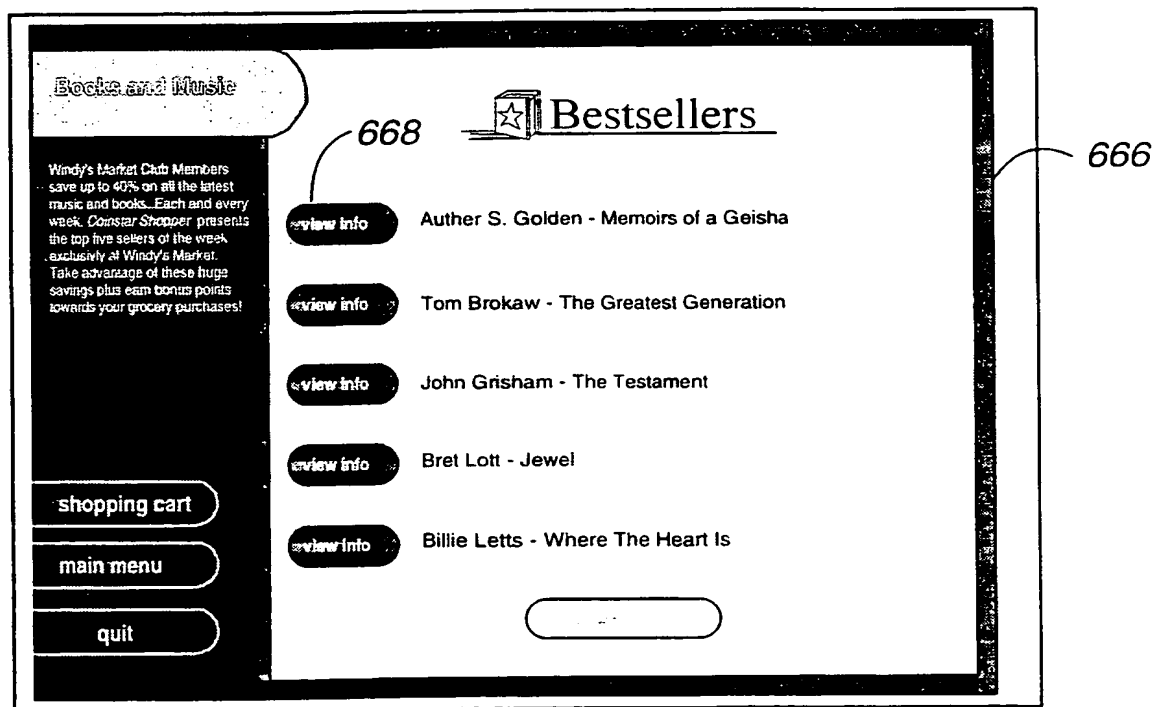
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**Fig. 6C****Fig. 6D**

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**Fig. 6E****Fig. 6F**

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**Fig. 6G****Fig. 6H**

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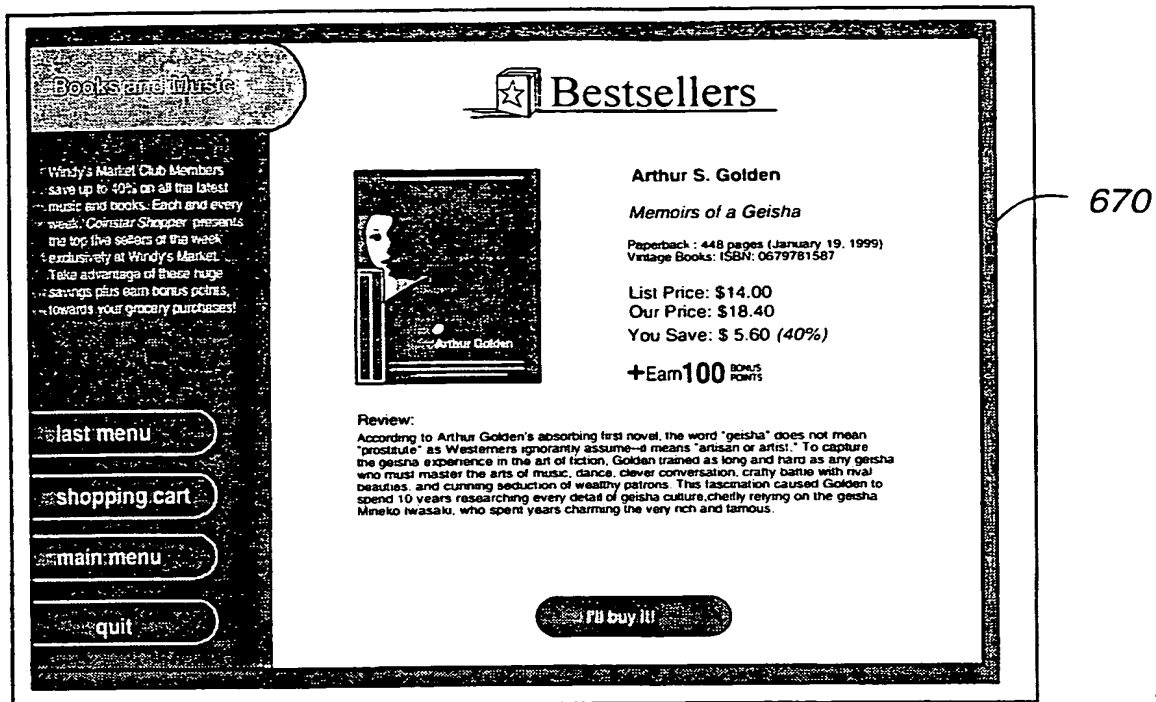


Fig. 6I

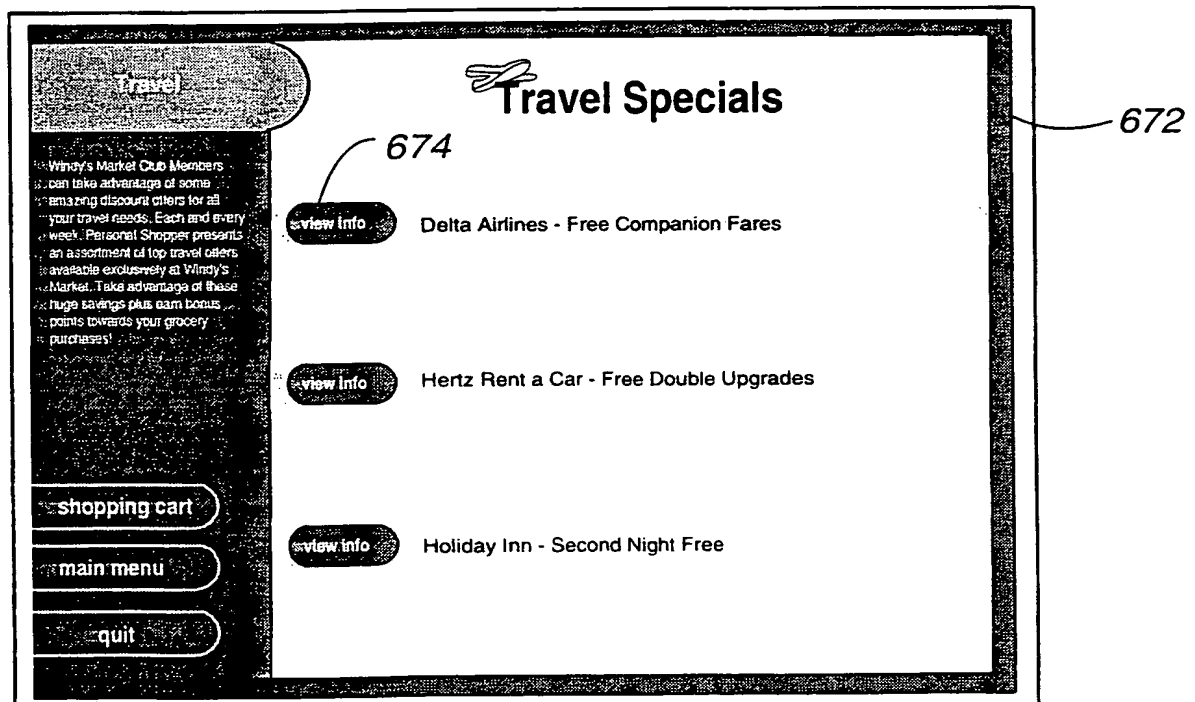


Fig. 6J

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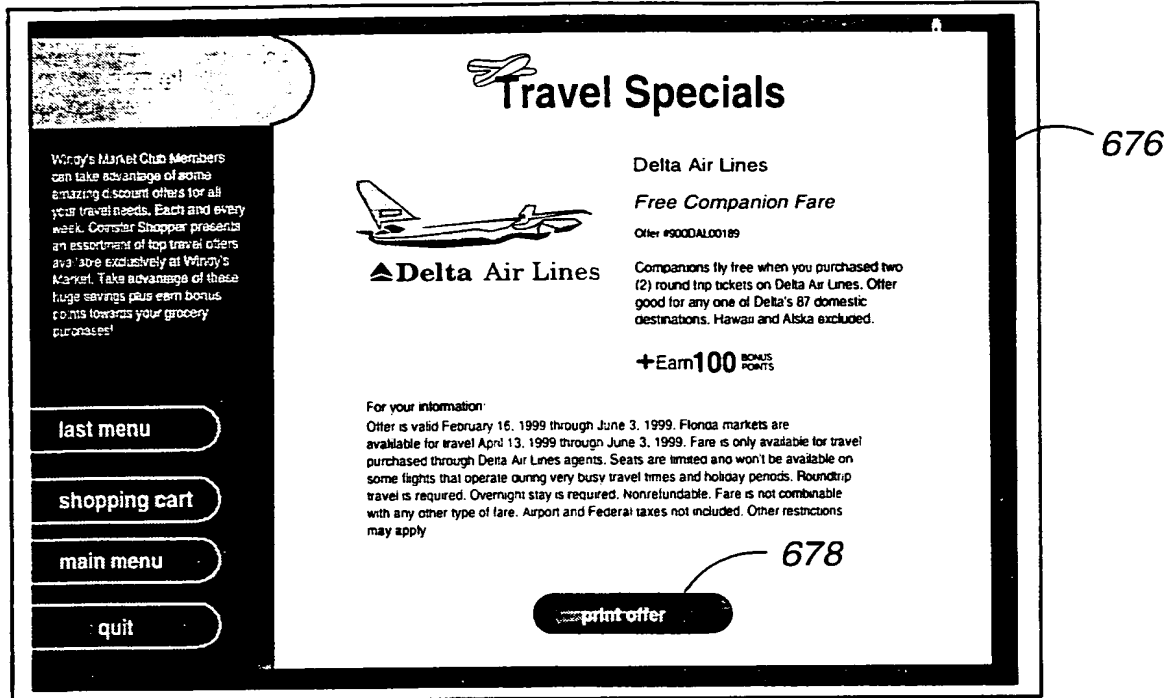


Fig. 6K

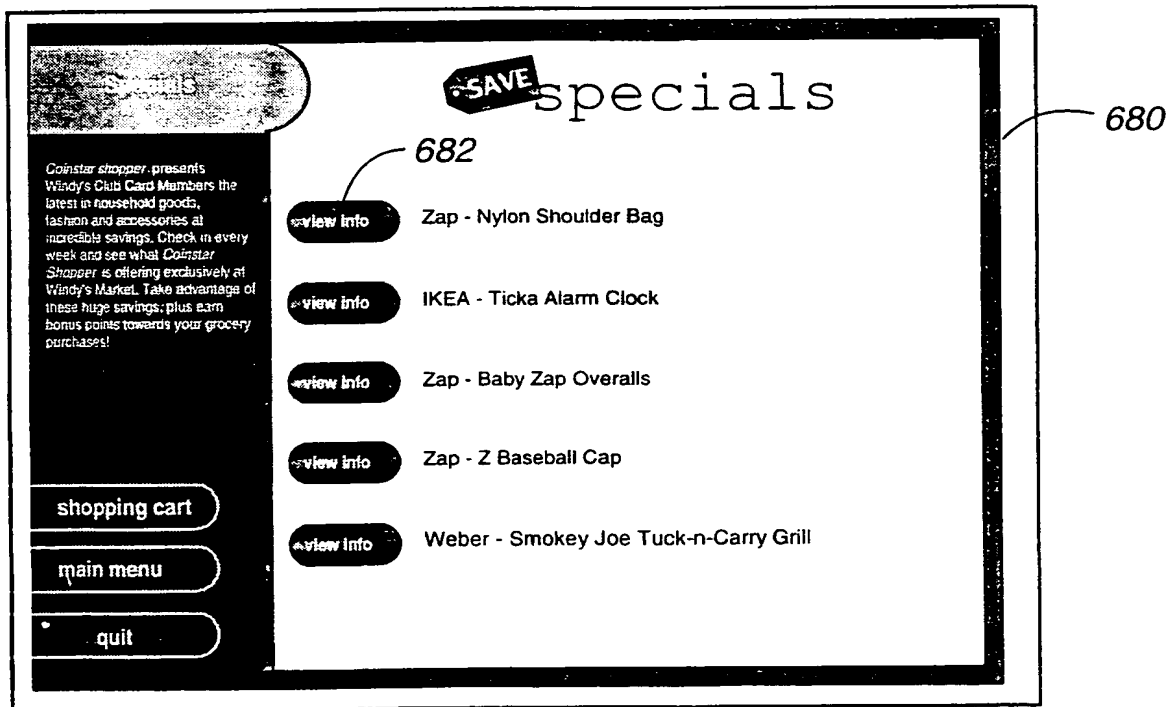


Fig. 6L

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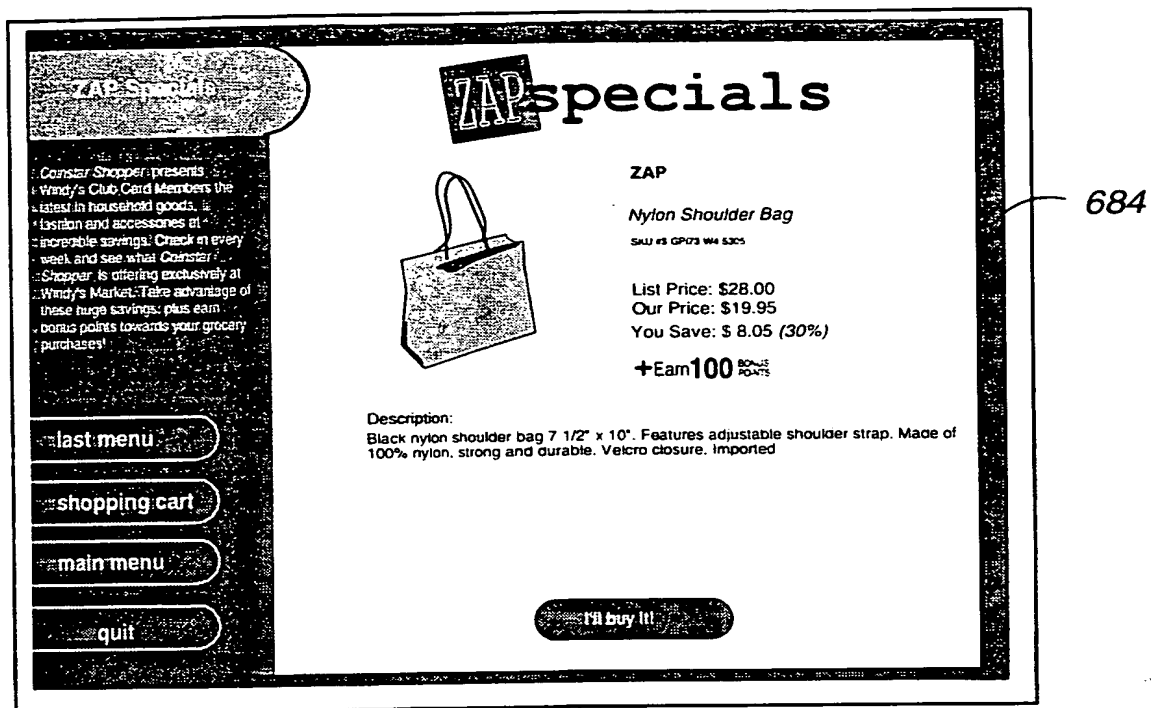


Fig. 6M

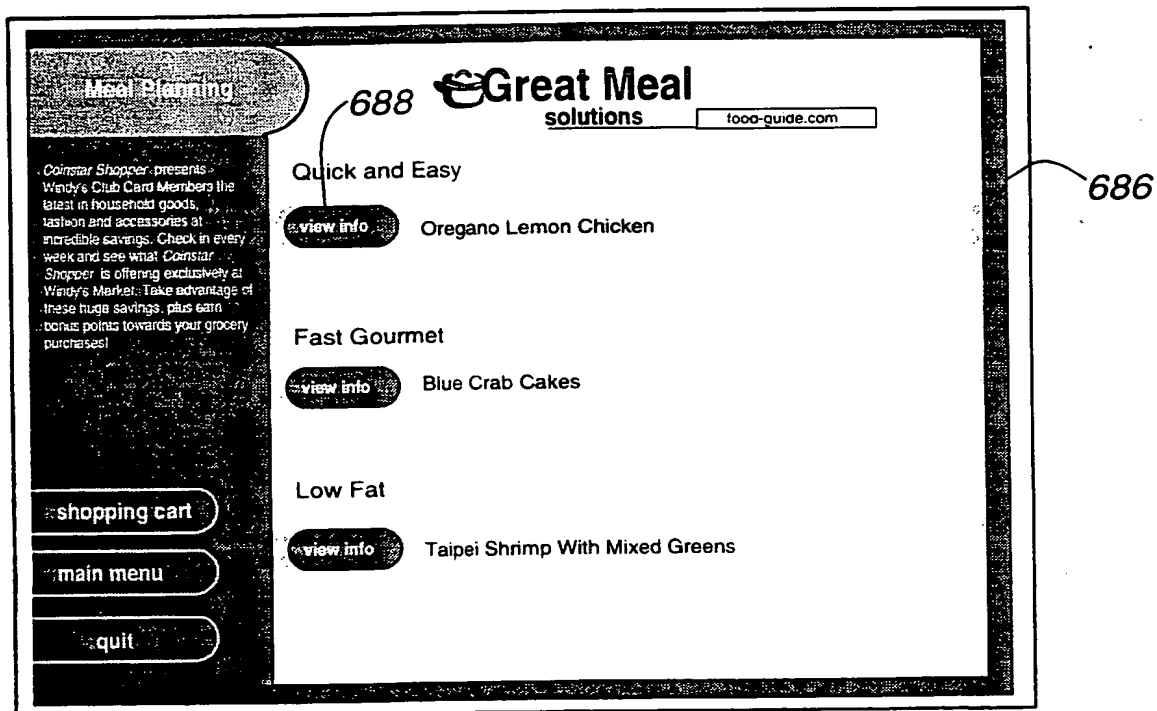


Fig. 6N

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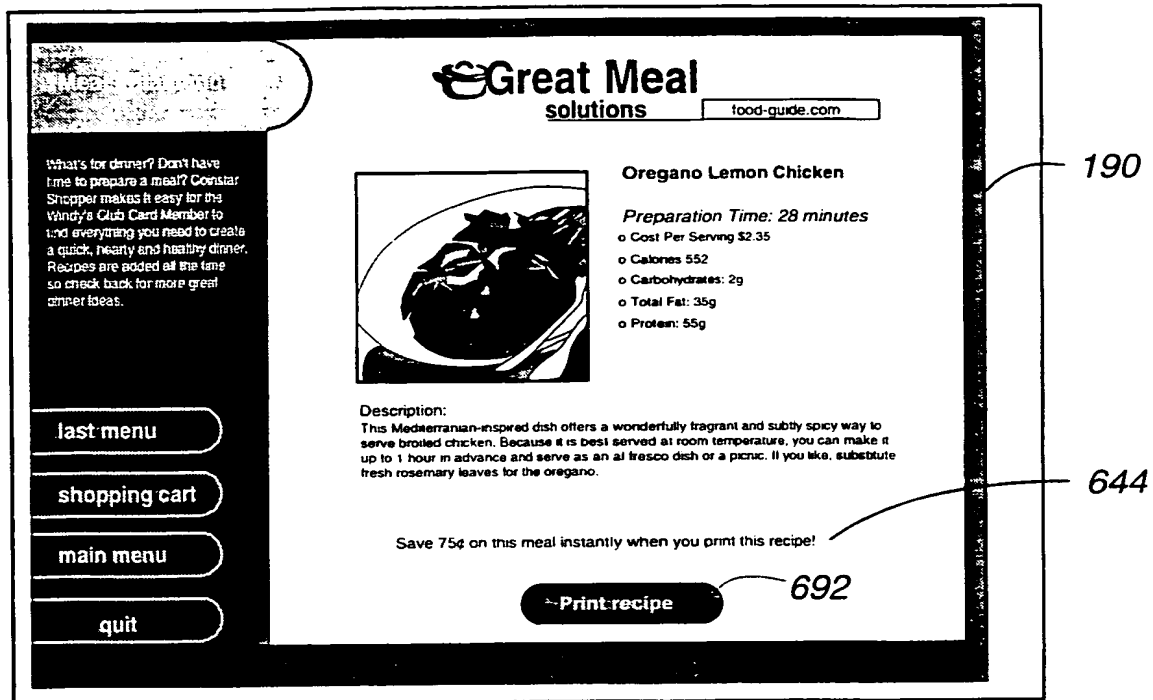


Fig. 6P

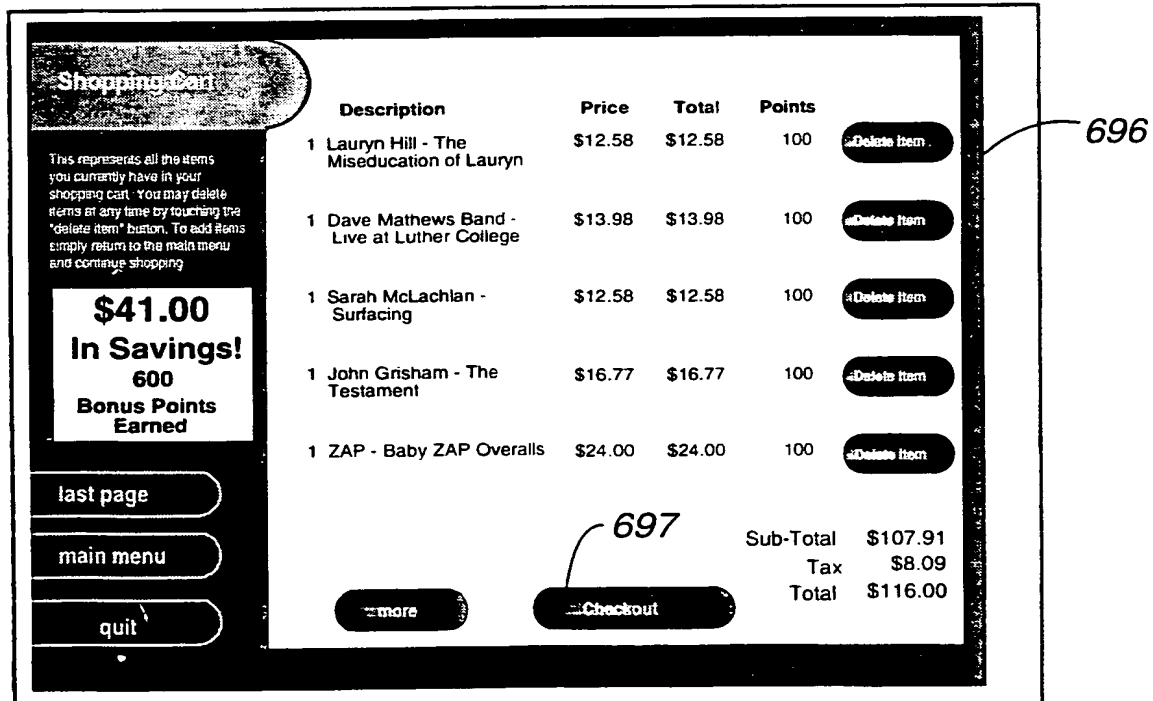
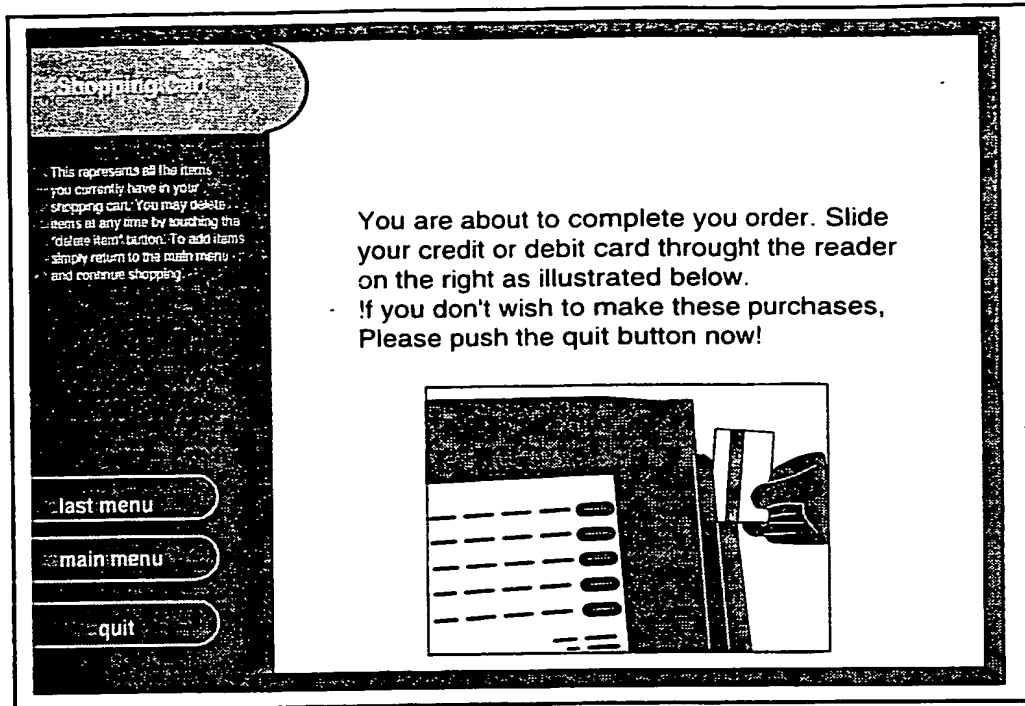


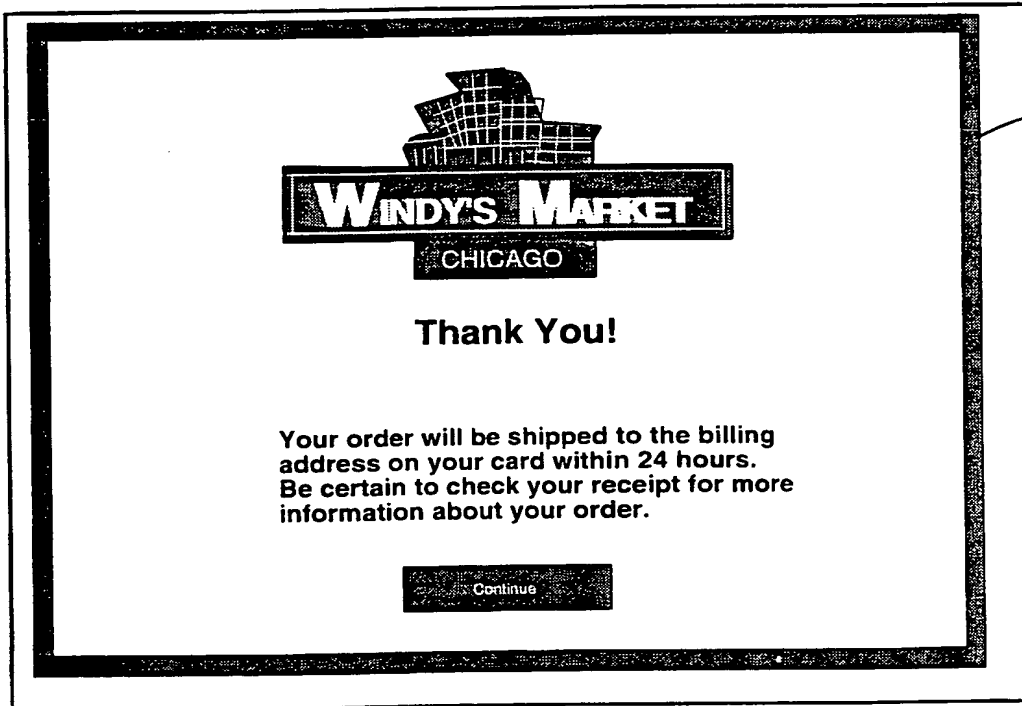
Fig. 6Q



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**Fig. 6R**

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**Fig. 6S**

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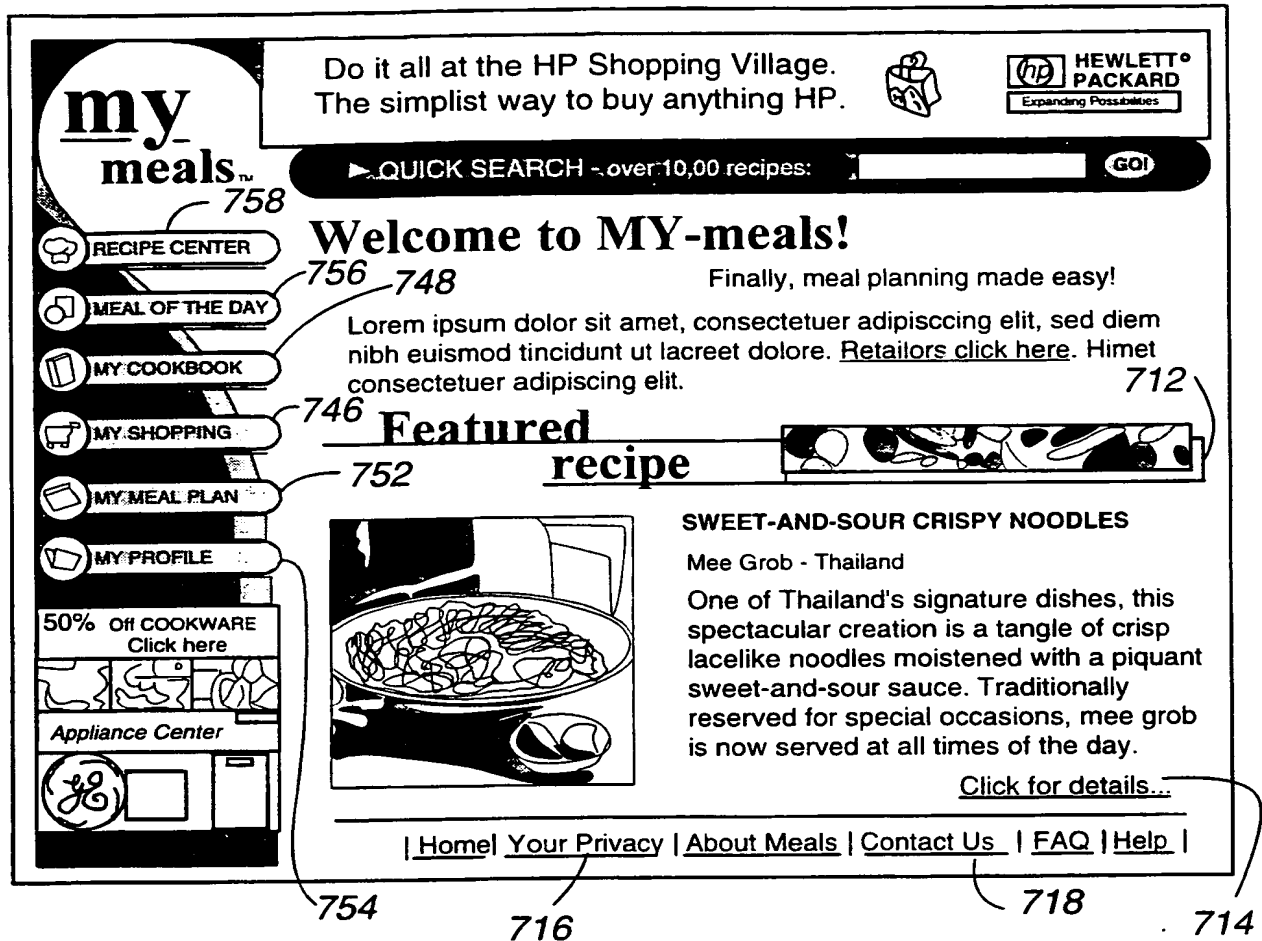


Fig. 7

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/25368

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) :G06F 17/60

US CL :705/26, 28

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/26, 28, 14, 15, 27

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Please See Extra Sheet.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	US 5,963,948 A (SHILCRAT) 05 October 1999, the background, the abstract, and the summary of the invention.	1-44
Y	US 4,703,423 A (BADO et al.) 27 October 1987, the background, the abstract, and the summary of the invention.	1-44
Y,E	US 6,123,259 A (OGASAWARA) 26 September 2000, the abstract, the background, and the summary of the invention.	1-44
Y	From Dialog File 9 pp.1-5, Haul Monitors..., BrandMarketing Supplement to Supermarket News, v IV, n 2, 03 February 1997.	1-44
Y	From Dialog file 9 pp.1-6, Beyond Value ..., Adweek Superbrands, p14+, 07 October 1996.	1-44



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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*E* earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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*O* document referring to an oral disclosure, use, exhibition or other means	
*P* document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

16 NOVEMBER 2000

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US00/25368

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages.	Relevant to claim No.
Y	WANSINK, Making old brands new, American Demographics, v 19, n 12, pp. 53-58, December 1997 (from Dialog Classic file 13, pp.1-8).	1-44
Y	From Dialog Classic file 16 pp.1-6, Retailers fine-tuning nutrition programs, Supermarket News, pp.20, 24 September 1990.	1-44
Y	From Dialog Classic file 20, pp.1-2, TimeSoft launches FamilyTime: ..., Business Wire, 04 May 1999.	1-44
Y	From Dialog Classic file 9 pp. 1-6, Targeting shoppers with media networks ..., BrandMarketing Supplement to Supermarket News, v V, n 6, p 38+, June 1998.	1-44
Y	TURCSIK, Mining Right, BrandMarketing Supplement to Supermarket News, v V, n 5, pg 48, 51-53. (from Dialog Classic file 13, pp.1-6).	1-44
Y	From Dialog Classic file 13 pp.1-7, Leaving the safety of the big box, Chain Store Age State of the Industry Supplement, pp. 24A-28A, August 1997.	1-44
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Y	From DIALOG(R) File 16 pp.1-5, Ingles sets out to RETRAIN CONSUMERS, Non-Foods Merchandising, p32, June 1995.	1-44
Y	From DIALOG(R) File 16 pp.1-2, Catalina marketing corporation kicks off sprotscheck (SM) to benefit school athletic programs, News Release, v0 n0, p1, 04 May 1992.	1-44
Y	From DIALOG(R) File 20 pp.1-2, Coinstar to unveil Internet product that links consumers and supermarket retailers, Business Wire, 25 February 1999.	1-44
Y	From DIALOG(R) File 20 pp.1-4, Batteries: the thirst for power: The better batteries become, the fewer are sold. So how to increase sales, Grocer, 12 September 1998	1-44

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US00/25368

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	POLEGATO et al., Food shopping profiles of career-oriented, income-oriented, and at-home wives, Journal of consumer affairs, 33, 1, 110, Summer 1999. (from Dialog(R) File 75, pp.1-14).	1-44
Y	BELL et al., Determining where to stop: fixed and variable costs of shopping, Journal of Marketing Research, v35, n3, p352(18), August 1998 (From Dialog(R) File 75, pp.1-20).	1-44
Y	FREEMAN, Marketing the market: savvy grocers reach out to their super customers, Marketing News, v32, n5, p1(2), 02 March 1998 (from Dialog(R) File 75 pp.1-4).	1-44
Y	POLEGATO et al., Family food shopping: strategies used by husbands and wives, Journal of Consumer Affairs, v28, n2, p278(22), Winter 1994 (from Dialog(R) File 75 pp.1-12).	1-44
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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US00/25368

### B. FIELDS SEARCHED

Documentation other than minimum documentation that are included in the fields searched:

Microsoft Press, Computer Dictionary, 3rd edition, 1997.  
American Bankers Association, Banking & Finance terminology, 1999.  
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### B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

WEST2.0/DERWENT, DIALOG CLASSIC, PROQUEST DIRECT, CORPORATE RESOUCENET (NPL)  
search terms: shop, assist, help, apparatus, shopper, retail location, device, input, output, receive, computer, provide, information, item, sale, shopping list, recipe, meal, purchase suggestion, brand of product, response, personal information, shopper identifier, frequent shopper number, database, previous purchase, coupon, electronic form, printer.